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INNOVATION IN HIGHER EDUCATION--DEVELOPMENTS, RESEARCH, AND PRIORITIES. NEW DIMENSIONS IN HIGHER EDUCATION, NUMBER 19.

BY- BASKIN, SAMUEL AND OTHERS

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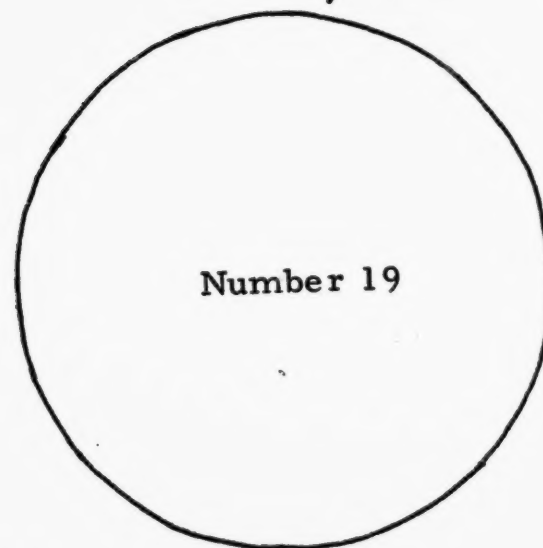
FOUR ESSAYS, EACH BY A DIFFERENT AUTHOR, PRESENT PARTICULAR ASPECTS OF INNOVATION IN HIGHER EDUCATION. TOGETHER THESE ESSAYS PROVIDE AN INSIGHT INTO THE PURPOSES OF BOTH THOSE WHO SEEK INNOVATION AND THOSE WHO RESIST IT, A SUMMARY OF RECENT INNOVATIONS CURRENTLY IN OPERATION IN HIGHER EDUCATION, AN ANALYSIS OF THE PROCESSES AND PROBLEMS OF INNOVATION, AND AN APPRAISAL OF THE PRIORITIES TO BE GIVEN TO DEVISING SOLUTIONS FOR PROBLEMS DEVELOPING FROM DEMANDS (1) FOR CHANGES IN THE EXTENT OF FACULTY AND STUDENT PARTICIPATION IN ADMINISTRATIVE PROCESSES, (2) FOR MORE RESEARCH ON EDUCATION, (3) FOR DIFFERENT CURRICULUMS TO MEET DIFFERENT GOALS, (4) FOR MORE INDIVIDUALIZED PROGRAMS OF STUDY, AND (5) FOR GREATER INTERACTION BETWEEN STUDENTS AND BETWEEN STUDENTS AND FACULTY. THE SERIES OF 14 GENERALIZATIONS STATED TO DESCRIBE THE PROCESS OF INNOVATION INCLUDED THE FOLLOWING--(1) THE SUPPORTERS OF AN INNOVATION HAVE MANY AND SOMETIMES DIVERGENT MOTIVES, (2) ACCEPTANCE AND IMPLEMENTATION OF AN INNOVATION IS FACILITATED BY EARLY INVOLVEMENT IN ITS DESIGN, (3) THE FIRST STEP IN ENLIGHTENED INNOVATION IS TO MOVE FROM SENSING A PROBLEM TO DIAGNOSING ITS CAUSES, (4) MOST EDUCATIONAL CHANGE IS IMITATION OF A BELLWETHERS' ACTIONS, (5) TOO FEW INNOVATIONS ARE CAREFULLY EVALUATED, AND (6) INNOVATIONS, ACCEPTED AND ESTABLISHED, BECOME AS RESISTANT TO CHANGE AS WERE THEIR PREDECESSORS. (AL)

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in Higher Education



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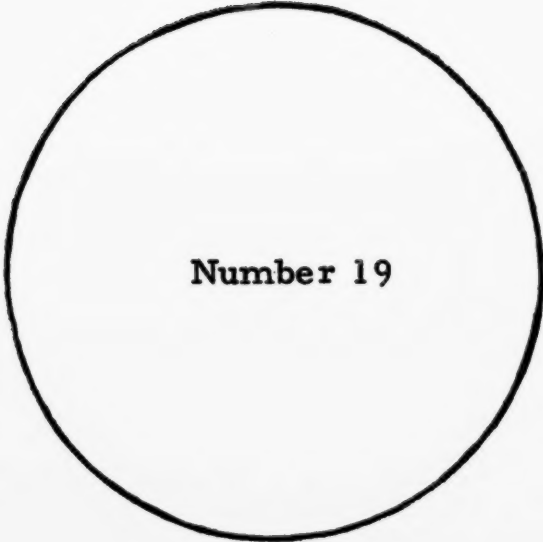
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NEW DIMENSIONS

IN HIGHER EDUCATION



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INNOVATION IN HIGHER EDUCATION:
Developments, Research, and Priorities

by Samuel Baskin
Sister Patricia Jean Manion
Goodwin Watson
James P. Dixon

Everett H. Hopkins, Editor

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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FOREWORD

This manuscript, unlike the others in the current New Dimensions series, has four authors, each writing on a particular aspect of innovation in higher education. Baskin coordinated and edited the entire manuscript, and authored the introductory section. Together, the four essays provide an excellent summary of not only the present state of innovation in higher education, but also a documentation of innovative developments in the past and a prognostic look into the future.

Of special value are the 14 generalizations about the innovative process as applied to institutions of higher learning. These generalizations are based not only upon the findings of research, institutional experimentation, and many years of institutional experience, but also upon the sound professional judgment and personal wisdom of Professor Goodwin Watson. They should prove to be invaluable to administrators, faculties, and students alike who are honestly seeking to improve the quality of their respective institutions rather than engaging in an internal struggle for power in matters of institutional governance.

Everett H. Hopkins

HIGHLIGHTS

1. It is one of the major paradoxes of our time that institutions of higher learning, which should be preparing our young men and women to enter a world of social and intellectual change, are themselves so resistant to change.
2. A wide range of innovations and experimentation is presently being developed in colleges and universities across the country. Among others, these include changing patterns of departmentalization, student participation in institutional planning and governance, off-campus experiences, interim programs, independent study, early admissions, alteration or elimination of grades, restructuring of curricula, the new technologies, and rearrangements of learning-living plans.
3. The time is long past when a college or university can be viewed as a self-sufficient community of scholars unrelated to or unaffected by the larger society. New technologies, changing populations, increased demands for education, new economic and political patterns, advances in communications systems, the knowledge explosion, urbanization process, and the rising tide of research and development in higher education are all forces affecting the responsiveness of individual campuses to the problems of the complex world about us. But much more research is needed on the innovative process itself, involving further analysis of "the conflict of forces and the strategies used during the inauguration of a new project."
4. Among the priorities suggested for individual institutions are the recruitment and encouragement of faculty members who are willing to innovate, the provision for student participation in the innovative process, extensive curricular revisions, and the further development of institutional research and planning procedures.

I. INTRODUCTION: SOME NOTES ON CHANGE AND RISK-TAKING IN AMERICAN HIGHER EDUCATION

by Samuel Baskin*

It is one of the major paradoxes of our times that institutions of higher learning, which should be preparing our young men and women to enter a world of social and intellectual revolution, are themselves so resistant to change. One observer of higher education put his criticism this way:

Despite its size and rapid growth, and despite the enormous contribution it has made to progress elsewhere in society, education has been notoriously slow to change its own internal arrangements. Throughout history, schools and colleges have been among the most conservative of all human institutions, with respect to their own internal affairs. Studies conducted at Columbia Teachers College show that the typical time lag between the inception of a new educational idea or practice and its adoption by a majority of schools or colleges has been on the order of 25 to 50 years

It is no exaggeration to say that there has not been a profoundly radical innovation in the technology of education since the introduction of the book in the 17th century. The self-contained classroom with its screeching, dusty blackboard, with its one teacher and as few pupils as possible,

* I am deeply indebted to Lawrence G. Porter for his help in developing these essays. Dr. Porter is Associate Professor of Literature at Antioch College, and more recently has been engaged by the Union for Research and Experimentation in Higher Education as an Associate for Program Planning.

and with the textbook as bible, has remained inviolate for generations.¹

It is a good question to ask: what makes American higher education that way?

The answer, of course, does not come easily. Its roots are in a complex of factors: habits and tradition (we teach the way we have been taught); the threat of change and the security of doing what one has done before (why change a good thing?); vested interests (we had better protect our own domain); bureaucracy (what better way to stifle creativity than to send the idea through channels?); the history of education itself (education "happens" when a student comes to a classroom, takes a seat, and looks up at the teacher); financial problems (contrast if you will industry's investment in research and development with higher education's allocations for programs or offices of this sort); the reward system (what "gain" for the teacher who challenges the system?); lack of time (contrary to their public image, most professors are so busy doing what they are doing that they have little time to ask whether they might proceed differently); inertia; and a host of other factors which lead us--sometimes consciously, sometimes unconsciously--to want to (or think we must) preserve what we have.

In the arguments about who is to blame, each "contractee"

tends to blame the other: the administrator sees the professor as hostile to change and unconcerned about the larger setting in which he works, protected by academic tenure or research grants; the professor sees the administrator as the culprit, more interested in creating a bureaucratic empire, and saving money, than in higher education. Meanwhile, the student, who has the most to lose, blames both administrators and faculty, who--when the chips are down--team up to preserve the status quo.

Some evidence of our present failings is found in the drop-out rate at our colleges and universities, which continues to range between 30 and 50 percent and sometimes higher. Some teachers will point to faulty admissions policies, to student indifference, to administrative interference, or to time spent in "non-teaching" duties. For them, the required changes are relatively simple: admit only bright, well-motivated students; curtail the powers of administrators; eliminate committees and quasi-administrative work; and cut down non-classroom contact with students.

Others, among them the authors of this volume, will argue that the situation is far more complex (one recent study, for example, indicates that at a number of highly selective colleges the highest drop-out rate was found to be among the most creative and intellectual students)² and that the solutions cannot be so superficial. At the

very least we need a readiness for self-examination, an openness to information about the learning process, and a willingness to use the products of both of these as instruments for much-needed change. In short, the kind of self-examination we are urging, must, if it is to produce adequate solutions, begin at--as some of our students would phrase it--the "gut" level.

The picture, however, is not all bleak, as is demonstrated in the essays which follow. Sister Patricia Jean Manion reminds us that while to those who desire change "the pace seems staggeringly slow and unimaginative," some developments are beginning to occur on the higher educational scene. Her essay is not, however, an expression of triumph; rather it is an appeal for greater effort to meet needs which we cannot afford to ignore.

It is important at this juncture to make clear that no argument is being developed here for change just for the sake of change. Our thesis--and the thesis of the three essays that follow--is that to be productive, change must be planned: it must have clear objectives, appropriate support, practical means of implementation, and provisions for adequate and impartial evaluation. As Goodwin Watson points out in his essay, "It is one thing simply to undertake change; it is quite another to seek to evaluate the effects of such change or to try to gain, through research, a better understanding of the necessary

strategies involved in the inception and adaptation of change."

(Despite this, he writes, only a few of the books in his bibliography are directly concerned with systematic evaluation and analysis.)

Watson's essay lists and discusses the forces which make change unavoidable, offers some generalizations on the innovative process (including some pitfalls), and cites the most common factors and arguments against innovation. His insights may send the reader back--this time with a more critical eye--to the examples provided by Sister Patricia Jean Manion. What, the reader may find himself asking, were the dynamics of this particular innovation? How did it come about? How well has it been planned? Which innovations are likely to succeed and which to fail, and for what reasons? To what degree do the changes really seek to address themselves to the larger problems of higher education?

This last question brings us to what should be one of the major concerns of American higher education: will its future development be determined by whatever "happens," or will it be what we might call "artfully revolutionized"--changed by conscious decision, based on clear perceptions of the kind of world we live in and the kinds of people we are?

In response to this kind of question, James Dixon develops a series of assumptions and priorities having to do with innovation:

assumptions about individualism, about affluence, about growth and development, about faculty and administrative autonomy, about students as teachers; priorities concerned with reshaping curricula, with selecting and training faculty, with drastically altering our thoughts about where education occurs and how long it should take--perhaps best summarized in his statement that there should be a high priority for supporting those experiments which show promise of increasing the flexibility and decreasing the rigidity of the educational process.

It is possible that there has never been a time in America when it is more imperative for educators to establish their own educational priorities, to look to the future and determine what changes are needed and how they best can be brought about. For American education today is faced by a new and powerful force: "The year 1965-66," writes Samuel Halperin, deputy assistant secretary for legislation at the U. S. Department of Health, Education, and Welfare, "is when American business discovered education. Sure profits are luring dozens of companies--in some cases with little prior experience in the field--to take the 'educational plunge' into producing school equipment and materials."³ Writing in Fortune, C. E. Silberman elaborates on some of the implications of this development:

Business has discovered the schools, and neither is likely to be the same again. It may be a bit premature to suggest, as Superintendent J. H. Martin of schools in

Mount Vernon, New York, does, that "the center of gravity for educational change is moving from the teachers' college and the superintendent's office to the corporation executive suite." But there can be no doubt about the longterm significance of business' new interest in the education market. The companies now coming into the market have resources--of manpower and talent as well as of capital--far greater than the education market has ever seen before. They have, in addition, a commitment to innovation and an experience in management that is also new to the field.⁴

Consider, for example, the resources possessed by the new company General Learning Corporation, formed by General Electric and Time, Inc., with a worth of \$37.5 million and with Francis Keppel, former U. S. Commissioner of Education, as chairman of its board. To this we could add a number of examples, and the list grows weekly: a merger between Random House and RCA; the purchase of Science Research Associates by IBM; the purchase by Xerox of Wesleyan University Press, American Education Publications, Basic Systems, Inc., and University Microfilms; CBS's agreement to buy Creative Playthings, Inc.; the purchase of Funk & Wagnalls by Reader's Digest Association, which plans to form a joint group with Sylvania Electronics (a subsidiary of General Telephone and Electronics); and the establishment of Westinghouse's Learning Corporation, "a new subsidiary with broad-based activities in the field of education."⁵ So significant is this movement of business into education that the American Council on Education has formed a Joint Committee on Education and Business, a move which "acknowledges

the growing need for better understanding, communication, and cooperation between institutions of higher education and leaders in business, especially in education-oriented business."⁶

The dramatic emergence of this "knowledge industry" (and how many people in higher education are aware of its existence?) presents the educator with a sharp challenge, his response to which may shape American education for generations to come. If he is not ready or able to raise himself above defensiveness and vested interest and set about revolutionizing education from within, this new force may--whether he likes it or not--do it for him, from the outside.⁷ And he may not be pleased with the results.

With such developments in mind, it will be seen that the essays in this volume are not utopian and purely theoretical; they do not sigh wistfully for an ideal future, nor do they "view with alarm" a frightening present. Instead, they point to a very real inevitability and need: the inevitability of change--almost surely radical change--in higher education; and the need for that change to be controlled by the best insights, intuitions, and energies that can be brought to it.

We live in a society in which a tragic number of people are not able to fulfill themselves, which is already running short of people trained to operate its increasingly complicated machinery, which is daily confronted by monumental challenges at home and abroad,

which exists in a world in which obsolescence is the price of inertia and destruction may very well be the price of obsolescence. So confronted, we must continually examine the means by which we educate our citizens, and when these means are found wanting we must develop better ones. Harold Howe, II, U. S. Commissioner of Education, believes that by continuing to operate as they do, "American Colleges run the risk of producing the oldest children in the world."⁸ Has there ever been a time in our history when we could less afford to take that risk?

II. RECENT DEVELOPMENTS

by Sister Patricia Jean Manion

The shifts and changes occurring in undergraduate education seem to form a common search for new structures to meet education's prevailing challenge of depth and breadth. While the ideas being advanced are of many sorts, most changes, in process or under consideration, underline a desire to manage the breadth-depth problem by finding new arrangements of space and time--a search for environmental positioning to add greater meaning to the student's educational experience.

The purpose of this unit is to indicate how some colleges are attempting to meet the manifold problems of education. While case illustrations have been drawn from a number of settings, it has not, of course, been possible to include all developments that have come to the writer's attention in this review.

For purposes of organization, the material has been grouped under three broad divisions dealing with breadth, depth, and environmental restructuring. The reader is cautioned to remember, however, that these divisions tend to categorize where no strict categories

really exist.

Reaching for Breadth

Attempts to afford students breadth of learning by exposure to many ideas and a variety of content areas have always carried the threat of shallowness which may produce dilettantes rather than liberally educated men and women. But recent trends, which stress breadth by providing common experiences through interdisciplinary seminars or off-campus programs, while widening the student's perspective, also emphasize certain underlying themes or interlocking problems which open to deeper and more profound questions, rather than stopping with premature answers or conclusions.

Non- and inter-departmentalization. Not long ago Warren B. Martin, former provost of Raymond College at the University of the Pacific, said:

American colleges and universities are organized by departments and specialization with the result that while a school may pay lip-service to the education of the whole person, in actual practice we fragment the person and assume responsibility for only a part of that person. To be even more accurate . . . most faculty members assume responsibility for only a part of the student's mind, leaving the rest of the student's mind to other professors in other disciplines, and, finally, leaving what is left of the person to student personnel services. Thus, we conclude, in practice if not in theory, that a man's intellectual power exists in isolation from his volitional, affectional, and valuational powers.⁹

Such concerns have produced constructive moves toward breadth,

cutting across disciplinary lines and drawing together those who teach so that they respond more fully and consciously to the student as a whole individual. Raymond College, for example, has no departments. Neither do Goddard, Monteith, the Experimental College at Berkeley, nor the New Division at Nasson College. Efforts to bridge departmental divisions are also under way at the University of Hawaii, where geoscience incorporates geology, meteorology, and solid earth geophysics, and oceanography combines elements from the physical and biological sciences as they relate to the sea.

Attempting by different means to eliminate fragmentation and to encourage breadth in the undergraduation program, Beloit College has only one required course for underclassmen, which is known as the Common Course. Breadth in the course comes from reading and discussing books and articles from theology, aesthetics, the humanities, and the behavioral, social, and natural sciences. Faculty from all departments participate as "older students" rather than as experts in their own disciplines. "The course is not a survey, but a series of sample probings at considerable depth along the continuum of intellectual culture."¹⁰

The Mills College faculty developed a common course, Styles of Civilization, by starting with a seminar for themselves. Concerned with the rapidly growing need for knowledge of non-Western

cultures, they convened a faculty seminar in this area in 1961 under Dr. Harold H. Fisher, noted historian and chairman emeritus of the Hoover Institute and Library at Stanford. Later, grants from the Asia Foundation and the Ford Foundation made possible faculty seminars and research in designing a syllabus. Styles of Civilization--which evolved from the efforts of persons from the arts, social sciences, literature, mathematics, psychology, biology, and education--"attempts to comprehend the traditions of China and India in terms of their approaches to the basic problems common to all civilizations."¹¹ The course builds on a problem-oriented approach and centers on the study of Chinese and Indian civilization.

In similar developments, Amherst College recently replaced its freshman-sophomore core curriculum with three new interdisciplinary courses designed to provide students with insight into the nature of each of the three general areas of academic concern. Stephens College has instituted a Common Seminar which stresses mastery of basic disciplines rather than mastery of content (topic of the seminar for one year was "London, 1600"; for another year, "Florence, 1500"). Florida Presbyterian College devotes the first two years of its program to the study of Hebrew and Greek sources of culture, major issues of medieval and renaissance Europe, and works and institutions of the modern world; the third and fourth years are given over to studies of Asian society, Christian faith,

and Great Issues. Monteith College, a small liberal arts college within Wayne State University, offers three cumulative basic courses in what it terms "synthetic disciplines"--Science of Society, Humanistic Studies, and Natural Science. The University of California-Irvine is placing a great emphasis on interdisciplinary approaches as a means of relating its organized research units to instruction; and New College of Hofstra University has developed a three-course sequence (the Nature of Disciplines, Images of Man, and Forms and Values), which is prescribed for all students.

Interdisciplinary seminars for upper-class students, which bring together faculty and students from different disciplines, are also becoming increasingly more common. Loretto Heights College has offered a five-department, interdisciplinary honors seminar for juniors and seniors for a number of years, and in the past three years the college has been experimenting with a capstone course, Woman in the World, an interdisciplinary offering open to all upper-class students. St. Mary's College, Notre Dame, has developed an interdepartmental program, Christian Culture, which brings to bear upon questions related to the Christian world the various points of view of art, history, literature, and theology. Mills College students can major in divisional and interdivisional work in American Civilization and varying combinations of sociology-anthropology, economics-philosophy, and politics and sociology-economics. And

an experiment at Florida State University intended to combat anonymity on a large university campus by bringing students into contact with each other in "clusters" of 30 (with students sharing the same classes) has proved so successful in its first year that 330 freshmen in 11 clusters will follow a similar arrangement this year. Approximately 150 of these students will be housed in groups in the same residence halls.

Student participation in program planning. Though breadth may be achieved by interdisciplinary offerings, another path to breadth for individuals necessitates latitude in curricular choices. In the recently proposed curriculum at St. Louis University a student must study in at least two distinct academic departments (an area rather than a departmental concentration) and is allowed freedom to fashion his program to personal educational objectives.

The U. S. Naval Academy, in its new curriculum, is permitting students greater choice in the social sciences and humanities. The plan affords breadth for future officers, who will need to understand problems of world societies and individuals in smaller, struggling nations. The most recent curricular changes at the Duke University School of Medicine and in the Stanford Plan of Medical Education allow for greater freedom of course selection. As the Stanford Bulletin explains, "The purpose is to educate the students so that

they truly have a choice of future development and need not reluctantly accept a path dictated by inadequate preparation."¹²

Marlboro College expects each student to design his own concentration by means of consultation with an adviser. Decisions are based on a comprehensive examination used to determine readiness for concentration in particular areas. Antioch and Goddard students file a plan (which may be revised) which sets goals that the student intends to reach during his undergraduate years. At Bard a student seeking admission to the Upper College appears before a committee to explain his proposed program.

Off-campus experience. Off-campus experience (work, study elsewhere, field research, etc.) is another way of achieving breadth. At Antioch, for example, the work-study program, with its emphasis on students taking paying or non-paying jobs in various cities and foreign countries, places educational value on exposure to other ways of thinking and seeing, to other cultures and subcultures. And the off-campus experience--whether it be a semester's sabbatical working full time with social scientists as practiced by Webster College students, or a course at a neighboring institution as is part of the expectation for students in the Claremont Colleges--is becoming more and more a common dimension of undergraduate education.

Sometimes the experience is arranged for by a group of colleges;

at other times students are given leaves to take advantage of these experiences. American University manages a Washington Semester Program in which students from schools such as Ohio Wesleyan, St. Olaf, and Cornell College spend a part of their junior year in the School of Government and Public Administration at American University. Drew University has a similar program, focused on the United Nations, which draws students from a number of colleges in other parts of the country. The Associated Colleges of the Midwest provide opportunities for students from the 10 member institutions to do research and to participate in seminars at the Argonne National Laboratories, the Newberry Library in Chicago, and at the Wilderness Field Station in Northern Minnesota. The Great Lakes Colleges Association offers opportunities for students from its 12 member colleges to study "critical" foreign languages and related areas. (Arabic is offered at Kenyon, Hindi at the College of Wooster, Japanese at Earlham, and Portuguese at Antioch.)

Salem College, Wake Forest, and Winston-Salem Teachers College jointly are able to offer work in Asian studies to their students. A similar program, studying a different area of the world each year, is taught by an intercollege faculty from St. Catherine, St. Thomas, Macalester, and Hamline University in St. Paul. Vassar and Wellesley jointly sponsor a summer internship in government in Washington, D. C. Students at Amherst, Mt. Holyoke,

Smith, and the University of Massachusetts may take courses at any of the four institutions. A similar arrangement has been in effect for some time among the Claremont Colleges and is just beginning between Loretto Heights and Regis College in Denver. And exchange programs like the one arranged by Ohio Wesleyan, Hampton Institute, Bennett College, and Spelman, and the one involving St. Olaf, Fisk, Morehouse, Spelman, and Tuskegee Institute, give students a chance to spend a semester on a campus different from their own.

Probably the most recent movement toward breadth of experience has developed by way of student involvement in college governance, which adds a new breadth of thinking for administration and faculty. Colleges such as Antioch, Bennington, and Goddard have functioned under community governments for a long time, but today more and more college and university committees have students as voting members. Several years ago only social life committees included students, but now the trend is more in the direction of student participation on curriculum, library, and academic committees. A few colleges even include students on committees that review such matters as faculty tenure.

Gaining Greater Depth

Recent attempts to give college students exposure to depth study, but not just in the sense of a major program of specialization,

include the freshman seminar, interim study programs, and other kinds of long- and short-term independent study, either by way of group or individual investigation.

Freshman seminars. The freshman seminar, pioneered at Harvard, is being tried or has been adopted as a learning structure for all students, not just for those in honors programs. Plans for the proposed college at the University of Michigan, to open in the fall of 1967, include seminar instruction at the freshman level. In the fall of 1964 Mills College's Department of English offered seminars for first-year students. "We felt that what the incoming freshmen needed most was the challenge and stimulus of exactly this sort of experience . . . teach them the vital differences between being a scholar and being a pupil," Professor Elizabeth Marie Pope explained.¹³ Mills' seminars cover a wide range of subjects, some concentrating on a genre, others on a literary movement or a particular author.

In 1965-66, Stanford University enrolled 260 freshmen in 38 seminars, with 200 on a waiting list. Forty-seven seminars are planned for the current year. Each seminar runs two quarters for a total of six units of academic credit and concentrates on such topics as the Molecular Biology of Differentiation, Problems in American Historiography, Earthquakes and Planets, and Warfare and the Modern State.

Southern Illinois University is experimenting with noncredit seminars by invitation for freshmen with outstanding records. At Pitzer College all freshmen belong to a seminar group (called the Fifth Course) of 12 to 15 students. Earlham College places freshmen in a tutorial group of 12 with two upper-class students called Fellows. Each student is thus afforded resources for planning his own program of study to meet general education requirements.

Another form of the freshman seminar is the Freshman Studies Course, the only requirement for freshmen at Sarah Lawrence, which brings together 10 to 13 students with a teacher who serves as don for these particular girls. The discussion topic of these groups varies according to the interest and background of the don.

Interim programs. Interim programs of study and work have long been in operation at Bennington and Goddard. Both Vermont colleges have for many years released their students from on-campus academic pursuits during January and February to work in various sections of the country as a part of their liberal education. In the last few years, many other colleges have adopted various forms of the interim idea, some emphasizing on-campus reading programs or concentrated courses, others providing opportunities for individuals or class groups to make field trips. Macalester College has a four-week interim in January "intended to provide scope for the greatest possible

exercise of creative imagination and independent inquiry under learning conditions quite different from the usual pattern in a regular term."¹⁴ On-campus concentrated courses in January, 1965, included these topics: the Rise of Great Ideas in Mathematics, Woman and Her World, and the History and Culture of Iran. Off-campus study took one group to Washington, D. C., to observe in government offices; another formed a Spanish language caravan to Mexico. Macalester requires four satisfactory interim terms as part of the graduation requirements.

Florida Presbyterian has a January interim "designed to develop the qualities of self-discipline in pursuits requiring the student to be the prime explorer."¹⁵ Colby College sees its January interim as a way of encouraging students to acquire the habit of exploring knowledge on their own since this will be the normal procedure for continued learning after graduation; Marymount College of Virginia stresses the use of interdisciplinary research projects in its interim program; and Shimer College deliberately avoids specifying what a student must do for the six-week period from late December until February in order to permit the student to engage in an activity which he or she would consider to be of most importance at that time.

Independent study. The term independent study, including the concentrated interim period variety, is sprinkled rather generously

through college and university publications; however, the number of colleges that require independent study as part of the total program is still small. The College of Wooster, for instance, requires that one-fifth of the student's time (12 credits) during the last two years be spent in independent study. "Independent study is not reserved for honor students alone Every member of the college family is thus included in the best academic invitation the college has to give."¹⁶

Kalamazoo in extending its calendar to a year-round operation allows periods for independent and foreign study. One full quarter in the senior year is allotted solely to independent study. Oberlin has a Summer Honors College, which runs for eight weeks and is open to selected students who register for six hours of independent study and a two-hour seminar. An independent plan must be submitted for approval to the sponsoring faculty member, who has no more than five students working with him during this independent study period.

Florida Presbyterian now has a "sixty percent" independent study program in which the library is the central focus, eliminating for the most part the textbook-survey approach and the course-semester structure of point-credit tabulation. At the end of the first year of college, each student is responsible for making his own plan

for the rest of his work. Independence is encouraged, with the student having various options of establishing credit in a particular area. At Monteith College independence is fostered by moving a student through general education courses which have certain independent activities, with the goal of reaching a point where he moves away from reliance on even the established discussion groups.

Wellesley, in its new three-term calendar, provides a more intensive work period in the April-June term by limiting students to two courses. In the junior year, one of the two Term-III courses must be an independent study project. University College (tentative name of the new college at the University of Massachusetts) includes fewer formal courses in its upper-division plan, with greater stress being placed on independent reading and research as the student advances.

Early concentration. Another approach to the question of depth is the Program of Early Concentration which Yale College has designed to meet the needs of entering students who are eager and able to concentrate in a field of special interest when they start college. A student's early decision to follow the plan, however, does not commit him to a major in the field.

Some of these semi-tutorial seminars work in ways not paralleled in other courses, through a combination of group discussions and individual conferences concerned with the development of independent study and individual projects They are all systematically limited to small numbers (five to eight students per course) of freshmen of exceptional

motivation, ability and preparation.¹⁷

A freshman at Bard, in order to build upon the foundation of his greatest interest and skill, may choose a "Trial Major," which permits him to take two of five courses in that field, or if he prefers, in a contrasting area of interest. "But whatever his selection, he must be led by something more than sheer whim, for he is expected to justify his choice to an adviser who helps him keep in mind a coherent program for the entire four years."¹⁸

A variation on this approach is found in a number of new colleges which focus early on some particular area of study or aspect of learning. Justin Morrill College at Michigan State University provides intensive language courses which involve about half the freshman studies. A summer term of study abroad adds to this concentration on languages as part of the international thrust of the college. The New Division of Nasson College has as its unifying principle a focus on world order. "The academic program of New Division, far from encouraging an ivory-tower isolation, fosters a concern over the disordered relationships of mankind This emphasis on a world view discourages provincialisms in thought or deed on the part of any student in the division."¹⁹

Covell College at the University of the Pacific, a Spanish-speaking college, provides an environment for depth in intercultural

understanding by bringing together students from North and South America. Callison College, another cluster college of the University of the Pacific, has a non-Western emphasis giving special attention to the problems of emerging nations. The 20 colleges projected for the University of California at Santa Cruz will each have an emphasis that aims at a kind of depth not otherwise possible. Cowell, the first of these, centers on the humanities, Adlai Stevenson College emphasizes the social sciences, and a third, to be opened soon, is expected to stress the natural sciences.

Restructuring the Learning Environment

The process of restructuring the educational environment to eliminate what in some cases have come to be barriers to a free-flowing learning experience includes such things as admitting students to college who have not yet graduated from high school and building multiple purpose living-learning centers. For some colleges it has taken the form of dissolving class and course structures and substituting written evaluations for grades. Restructuring has applied not only to formulating new programs but also to designing new physical arrangements to maintain a sense of identity within the larger university complex.

Early admissions. A few colleges are offering early admission to superior students from excellent high schools at the end of the

eleventh grade. Chapman College and Kent State, for example, now do this for a limited number of high school students. In the 1964-65 academic year, 27 high school students attended Kent State University. The records of this group were such that the college has now adopted a policy of regularly accepting as full-time students those high school students who meet certain selection criteria. Shimer College accepts qualified students after the second year of high school. Vanderbilt allows high school students to enroll in freshman level courses while still in high school, this work to be counted later toward a degree.

Grading. While the entrance barrier of high school graduation is being waived for some students, grades and grade-point averages are being eliminated or minimized for others. Students in the New Division at Nasson College will receive written evaluation of their work rather than letter or number grades. This manner of consultation regarding student progress and development has been part of the educational philosophy at Sarah Lawrence and Bennington for some time, but until recently such colleges were pressured by other colleges and graduate schools to translate such evaluations into letter grades for transfer purposes. Gradually, as this method has become more common, these colleges no longer need to compromise a basic belief that grades, since they are inadequate evaluations, should not be used. Goddard College explains its policy this way: "Often he [the teacher] is the person best qualified to know and ask important

questions. He can be useful in holding a mirror up to the student: objectively recording his behavior as a learner so that he can alter or improve it. No letter or number grade can serve these purposes, and Goddard teachers make no use of them."²⁰

Bennington College sees other labels besides grades as hindrances to the educational process. In addition to written evaluations instead of grades, Bennington has no examinations, no specialized degree requirements, no academic honors or special dean's lists. Florida Presbyterian College uses ratings of Honors, Satisfactory, and Unsatisfactory for advising purposes and for transfer to other institutions, rather than grades.

The use of a pass-fail option, instead of a letter grade, is in limited use now in such diverse places as Carleton, Brandeis, Duke, Goucher, Princeton, and Knox. A recent announcement from Brandeis University states that during their undergraduate years students will be permitted to take four semester courses on the pass-fail basis. At Princeton, all students may take one course per year with a pass-fail arrangement, but in the junior and senior years these are restricted to courses outside the major. Since courses taken under this plan are not computed in the grade-point average, the barrier that has prevented students from venturing into fields outside their own tested competence has been eliminated. Carleton permits a

student, after he has finished almost half his undergraduate work, to take one course per term, up to seven courses, on this plan.

Curricular restructuring. Restructuring has shown itself in a multitude of experimental programs--some for first-year students, others for seniors or honor students. New divisions and new colleges within larger institutions have developed. Even a student-initiated experimental college, at San Francisco State, is now in existence. All of these efforts toward greater flexibility attempt to free students to learn and faculty to teach. All recognize the needs of the individual to find and utilize his best means of learning in order to acquire the facility to educate and re-educate himself through life. More and more, it seems, as President James P. Dixon of Antioch has said, the college is becoming a resource center to which persons come and then return throughout extended periods of life. Education has become a life endeavor and colleges are only one part of a much larger concept of higher education.

Some colleges, like Antioch with its experimental First Year Program, are allowing students to use the college as a composite of resources to be tapped and tested. Now in its second year, the Antioch program frees students from the traditional course structure which puts groups of students into lectures and discussion groups for a specific number of sessions over a quarter or a semester. Instead,

this program makes available such things as presentations which are open to any students who choose to attend them, followed by seminars which run for variable lengths of time and are continued in another quarter after students have been away on a work quarter. Some regular courses are also available for those students who function better with a more traditional structure. But designing and carrying through the first year's work becomes an individual plan with the student having the added resources of a preceptoral group which includes 13 other first-year students, two upper-class preceptoral fellows, and a faculty member preceptor. Approximately one-third of the students' time is devoted to discussion and study in the preceptoral group. The structure of the remainder of the student's time becomes his own responsibility.

At San Francisco State College the existing structure was flexible enough to allow for student-initiated courses, which form the base of the Experimental College. The college started in the fall of 1965 when two seminars for freshmen and sophomores were organized by a student, Cynthia Carlson, on a voluntary basis with no college credit involved. The fact that San Francisco State had for several years been developing strong, positive relationships among students, faculty, and administrators may account for a favorable decision when students sought to have courses organized at the Experimental College approved for credit by the college. In the spring of 1966

this student-initiated innovation had 22 courses, 25 student organizers, about 30 faculty advisers, and 350 enrollees, of whom 66 took a credit option through San Francisco State College.

The Experimental College started by Dr. Joseph Tussman and several colleagues at the University of California at Berkeley had 150 students enrolled last year. The program eliminates course and class segmentation, with students and faculty jointly pursuing areas of thought important to them, without concern for the usual course format. The Berkeley experiment, taking place in a university known for the great emphasis and importance given to research, aims particularly at engaging faculty in teaching.

Other attempts at restructuring are not as dramatic or as pervasive as those at Antioch, San Francisco, or Berkeley, but they are in other ways steps toward greater flexibility. Stanford, for example, announced in April of 1966 that students and faculty can arrange special seminars for academic credit on topics of mutual interest. Students who participate in organizing these seminars have priority in enrollment. The only restriction on students is that they may take no more than one special seminar per quarter.

Intended to give students maximum freedom in the methods by which they gain a liberal arts education, the Ford Foundation-sponsored Pilot Program in Independent Study (also known as

"Operation Opportunity") allows 25 freshmen at Lake Forest, Colorado, Allegheny, Colby, Florida Presbyterian, and Pomona to devise individual schedules of reading, lectures, laboratory, and other experiences with no regular course work or grading. The evaluation of their efforts will be made by an outside board of scholars at the end of two years.

Michigan State University and Amherst have similar plans, applicable to students of superior ability. At Michigan State after the first year and at Amherst after the second, all regular requirements are waived and these students, working closely with a faculty adviser are free to plan their own work as preparation for graduation.

Technology. In the search for alternate ways of learning and expanding opportunities beyond the limits of the local environment, baccalaureate education has come into a new era. New ways of getting at learning are being developed through technology--and rapid means of travel and transportation are taking students and teachers to previously inaccessible parts of the world. The world, as it were, is rapidly becoming the college student's classroom.

The academic community, long skeptical of mechanical devices that depersonalize education, has taken a second look at them in the past few years. Professor S. N. Postlethwait's audio-tutorial system of laboratory instruction developed at Purdue for a freshman course in botany was one of the pioneer attempts in the use of

electronic devices in conjunction with general assembly sessions and small-group discussions. "This laboratory currently consists of about 30 study booths, each equipped with a tape player, appropriate audio tapes, an 8mm loop film projector, microscope, live specimens, and other materials which may be required at a given time in the instructional sequence."²¹ Students choose their own time to work in the laboratory, where they make use of audio tapes as they work through their experiments.

In the area of programming, Dr. Donald Paden of the University of Illinois at Urbana has been successful in preparing an experimental course in economics. At Ohio State University a laboratory with self-instruction facilities and programmed materials is being developed in conjunction with an introductory course in education. An instructional development service has been set up at Michigan State to aid faculty in the solution of instructional and curricular needs. Collecting existing knowledge about the learning process and the application of the new educational media is one service of this new center.

Illinois Teachers College-North now has an auditorium in which 500 seats are equipped with six-choice responder units for large group feedback and testing. (The auditorium also has a number of media capabilities such as television and film and slide projectors that afford the lecturer a variety of audiovisual possibilities.)

Another type of learning center is that at Oklahoma Christian, where each student can study independently in his own carrel, which is equipped with dial access to audio tapes.

A similar system is available at Grand Valley State College, where students have access to 120 audio tapes which are rescheduled and programmed each week. Grand Valley State College also has eight video channels by which students, using a channel selector and telephone-type dial system, can play back lectures as supplements to their course work. Oral Roberts University in Tulsa is in the process of installing audio and video equipment in a new six-story Learning Resource Center.

A few years ago, illustrations of the use of video-taping--in preparation of teachers, for instance--were limited to the work of Robert Pace and Dwight Allen of Stanford and to the teacher-training program at Hunter College. Now, though few schools own equipment like the mobile unit of Marywood College (which takes the video equipment to the school where a student teacher is working to record her work in the classroom), the colleges using video equipment are numerous indeed, as are the ways in which it is being used to extend the learning environment.

Overseas programs. Extension of environment is also possible for colleges having various kinds of overseas opportunities for its

students. Almost every college, if it does not have its own program, at least shares in one or several programs sponsored by other institutions. A unique program is that of the Seven Seas Division of Chapman College. The floating campus, the Holland-American Liner SS Ryndam, takes two semesters to go around the world. Classes meet on board six days a week when the campus is afloat. Special in-port programs are held, taking advantage of the particular foreign country in which the ship is docked. Lecturers from educational institutions around the world board the ship for specified periods throughout the semester-voyage.

Some colleges, such as Beloit, the New Division of Nasson, and Justin Morrill College, have chosen a world focus as basic to the liberal arts program. Study abroad in these colleges is an integral part of the program.

Learning-living plans. As colleges and universities look outward to expansion beyond their own confines, they also look inward to the individual and the kinds of personal support needed to maximize his human potential. So we find both small colleges and large universities examining the whole question of arranging the on-campus physical environment so as to meet these needs.

Bowdoin College, for example, now has a Senior Center--three buildings in which seniors live in four-man suites, 16 students on

each floor--which is a study and living complex that includes faculty offices and conference and seminar rooms. Dean Nathaniel C. Kendrick has said of the center: "A greater amount of independent study, either in the form of seminars or of work connected with the major, is being carried on, and there is concern for the extension of this into the earlier years in the college."²²

Stephens College reverses the procedure by its House Plan for freshmen. Some 100 freshmen are selected to reside in a living-learning center. This group is assigned a teaching team of four teachers and a resident counselor, with whom they pursue five courses. One purpose of the plan is to bring faculty and students into closer proximity so that faculty might encourage students to develop their talents and capabilities through research projects.

Goddard, which looks to groups of 250 students working and learning together as ideal for developing community spirit, has opened a second campus adjacent to the first, where students living in houses of 16 can learn to study and work in a closer relationship with others. A large school, the University of Massachusetts, is experimenting with Orchard Hill Residence College, which consists of four separate buildings, each housing 330 students. Like Goddard's plan, the involvement of academic faculty is important in the Orchard Hill concept. Both colleges have placed faculty offices in the

residence units.

Numerous attempts are now in process to form smaller units within large universities. Monteith College of Wayne State University has been under close scrutiny for several years. New College at Hofstra is another example. A release by the National Association of State Universities and Land-Grant Colleges describes the efforts of almost a dozen institutions to start anywhere from one to 20 new colleges over the next few years: these include Rutgers' Livingston College which opened in 1967; the 20 projected colleges at the University of California at Santa Cruz, which will open one by one over the next 15 years; the San Diego campus of the University of California, which is planning to establish 12 small college units; and the State University of New York at Stony Brook, which plans to establish a number of small residential colleges within its university structure.

Conclusion

For those who have not been involved in change, this catalogue of recent developments may seem overwhelming; to those who have been part of such change, the pace seems staggeringly slow and unimaginative.

Although in summary the amount and variety of experimental and innovative programs appears substantial, for the major portion of the 2,300 institutions of higher education the movement is minimal.

Few if any of the new colleges, for instance, provide curricular patterns not previously tried. Most are simply new arrangements of old parts with other names. Many colleges have eliminated stringent course requirements, supplied independent study opportunities, purchased new hardware, but the day for radically new approaches is still somewhere in the future. Significant involvement of students in creating programs does not yet exist. The role of faculty as learners in the common pursuit of knowledge is only a romantic notion discussed among small clusters of students and faculty disillusioned with the present situation in the classroom. Few professors are willing to let students take tangential paths, freeing those who can pursue new lines on their own. The deep dependence upon the presence of both teacher and student in our present learning situations indicates the absence of a concept of education in which the impact of learner on learner is central. Daring administrative patterns and large-scale interinstitutional sharing does not yet exist. Most efforts have been token, with no institutions willing to share to the point of interdependence.

There are glimmers of hope, but too much of what is being done is patchwork. The creative designers and doers are still threatened--or immobilized--by the patterns and structures established by those who find security in that which has already been tried and accepted.

III. INNOVATION: PROCESSES, PRACTICE, AND RESEARCH

by Goodwin Watson

Colleges and universities have been shoemaker's children. Professors conduct research on many things, from cabbages to kings, but seldom on their own academic operations. The need for colleges to keep up with--if not ahead of--the changing times is well recognized. The inadequate achievements of present institutions have been fairly well established (notably in such studies as those of Jacob and Sanford). There is a chorus of exhortations--articles beginning "Higher Education should" or "must." But how? What are the operations by which universities innovate?

This section of this report deals with the problem of change in American higher education. It begins with a description of some of the social forces contributing to change, outlines some principles relating to the strategy of innovation, and discusses some of the factors that make for resistance to change.

Social Forces

The time is long past when a college or university can be viewed as a self-sufficient community of scholars unrelated to or unaffected

by the larger society. New technologies, changing populations, increased demands for education, new economic and political patterns, advances in communications systems, and new scientific developments are all having a profound effect on the course and organization of higher education. We will list nine kinds of social change to which various commentators on innovation in higher education have attributed major responsive developments on our campuses.

1. Increasing number of students. Cartter²³ envisions that we will have some 15 million students in our colleges and universities in the next 30 years. This impressive statistic is brought about by population increases, a rise in economic prosperity, and demands for workers at more complicated jobs. More and bigger colleges have resulted. Many of the innovations such as the establishment of small autonomous colleges within large universities, as described in the previous section of this report, represent ways of coping with the larger numbers of students.

2. Rapid expansion of knowledge. The acceleration of research during the past two decades into a major industry has brought what is often called an "explosion" of knowledge. Last year 15,000 technical journals published a million papers. Knowledge production, according to Machlup,²⁴ accounted (by 1960) for 29 percent of the GNP and was growing at twice the rate of the rest of the economy.

Hence, in colleges we have seen differentiation of more and more specialized courses, with alternating efforts to merge and condense these into larger integrated units. Interinstitutional cooperation has arisen as small colleges have recognized that alone they cannot provide for all the special training some students will require.

3. Advancing technology. New inventions have created a demand for new kinds of technicians and have also provided the possibility of new devices for guiding learning. Most students expect college to prepare them for a good job, and, as the nature of work changes, the college is expected to adapt. Boulding,²⁵ commenting on organizational change generally, finds that technology influences by "supply" even more than by "demand." Thus, videotape, kinescope, television, and machines which respond appropriately to facilitate learning have been much talked about and often used in experimental programs. "Learning resources centers" have been established on some campuses to promote and to coordinate use of new media of instruction.

4. Competition for top talent. Business, government, and other institutions have grown larger and more complex. They compete for the top levels of managerial talent. Gifted children are recognized as a scarce resource. Thus, honors programs emerged first for those students with special promise. Early admission to college and

advanced standing have helped some abler pupils escape from boredom in high school or first-year college courses beneath their level of competence. The honors program began with superior students at Swarthmore in the 1920's but has grown, especially since 1960, and is now reaching out to less-gifted students.

5. American influence in the world community. Rapid travel and communication have brought Americans close to people on every continent. American wealth, power, and prestige have reached unprecedented levels. American youth in the Peace Corps and other service projects are trying to raise standards of living and education in scores of disadvantaged nations. Foreign students clamor for admission to American colleges and American students increasingly do some of their study abroad. A good college education today must be broader than the American or the Western European community. In the near future almost all American college graduates will have some responsibilities and/or opportunities within other nations. All will have a part in shaping American national policies to cope with world affairs. Centers abroad where American students can live and learn have increased significantly, but many have not grasped the potential value of their new setting and are merely replicating as nearly as feasible the home campus.

6. Competition for world leadership. Many discussions of

educational innovation in the United States date its rapid advance from the launching of the U.S.S.R.'s first Sputnik. While there are many social forces supporting improvement in the teaching of physical science and mathematics, competition with the Soviet Union in the space race has been a major factor.

7. Mounting costs. More students, more courses, more equipment, and rising prices demand more money. Colleges and universities have had to take a close look at ways of reducing costs. Consequent developments have been all-year use of facilities and interinstitutional cooperation in building expensive laboratories. Some experiments with educational television have been designed to offer high quality educational experiences to enough students so that the cost per student is smaller than it would otherwise be.

8. Urbanization. The redistribution of population, as rural residents have moved to cities and inner-city residents have moved to suburbs, has had an impact on many colleges. Inner-city colleges serve a very different community from that which surrounded them a generation ago. The huge commuter colleges in urban areas cannot control the norms and social climate of the campus as can smaller residential colleges in communities which they dominate. Parking lots are more essential than dormitories. A premium is placed on programs, such as self-directed study, which permit students to

work at their own rate with a minimum of time spent attending classes. Television may save hours of commuting time, and learning resources centers may promptly connect students working at home with films or tapes or required pages from books.

9. The rising tide of research and development. Innovation is the order of our day. It is in the air. Expenditures on research and development have doubled in each decade since 1930. Speed of travel increased by a factor of 10 when man moved from horses to trains, and again when he moved from trains to planes, but the move from planes to rockets will bring an increase factor of 25.²⁶ The Manhattan project convinced governments that investments of billions of dollars in research can be highly productive. It is not surprising that many leading educators now advocate a research and development official or department for each institution of higher education.

Generalizations on the Innovative Process

1. The process of innovation varies with the nature of the change. A typology of educational change is needed to permit appropriate generalization. For example, the obstacles to be overcome by a professor who wants to try a new method within his own course are slight in comparison with those encountered in efforts to get rid of a dull professor, to build interdepartmental courses, or to launch a new college. Faculties are generally ready to accept

such changes as new specialized courses desired by a growing department, but they are reluctant to prune proliferated offerings. Accretion is simple; design is difficult. It is fairly easy to add a foreign study course, but very difficult to make it well-integrated with home campus activities.

2. The process of innovation varies with the source of the initiative. Most innovation in higher education results from pressure from outside the institution rather than from creative efforts within it. The most powerful stimulation in recent years has come from foundation grants and from government. Some 50 state surveys have been made during the past decade, resulting in such striking expansion plans as those of California and Florida. Medical, legal, religious, and engineering education has been appraised and criticized by surveys within each field of professional certification. Control of large funds by foundations and government permits them to exert powerful pressure on the activities of needy institutions and ambitious individuals.

When change arises from within a college, it proceeds most smoothly if inaugurated from the top. That is not to say that a president can always have his way. Robert Hutchins had a great influence on Chicago, but that university never fulfilled his hopes for it. Some recent commentators on the role of the president find

him necessarily serving more of a balancing and less of an initiating function. Riesman²⁷ argues that deans are more innovative than either presidents or professors. Perkins²⁸ values especially those senior faculty who devote virtually full time to thinking about the institution as a whole.

The innovative role of the professor is apparent mainly in his own classroom; he would prefer to see the college as a stable framework within which he has freedom for personal experiments. Sometimes, however, younger professors are bold enough to challenge the traditional college patterns and come up with promising innovations.

Since the events at Berkeley, the student movement is seeking to increase its initiative on many campuses. At San Francisco State College (see preceding chapter) students have planned and organized an Experimental College, using more advanced students as instructors. "Free Universities" in New York and a dozen other cities also represent a return to the original pattern of the European university in which bands of students hired chosen instructors.

Perkins,²⁹ in agreement with many administrators, doubts that students who have spent less than four years in a college can possess the experience to make decisions which are timely, feasible, wise, and congruent with the ethos of the particular institution. Peterson,³⁰ in a questionnaire study, found the usual proportion of actively

protesting students on a campus to be only about 5 percent of the student body, and their area of interest was very seldom the improvement of instruction.

Among administrators, faculty, and students, those most likely to initiate changes are "cosmopolites" rather than "locals." They attend more meetings in distant places; their friendships are more often outside the local community; they keep up with affairs of the nation and the world. Personal experience with experimental colleges suggests to the writer an allied dimension. Innovators seldom limit their interests to their major discipline: they are transdisciplinary in their concerns.

3. The course of an innovation varies with its timeliness.

Timeliness of innovation may be indicated by the conjunction of several mutually supporting changes. For example, reform that has long seemed desirable often becomes feasible when it has been introduced by a rival college or when a donor appears with money to finance a trial.

The beginning of a new era is viewed as a good time to introduce a major innovation. Cartter³¹ argues that the greatest opportunity to be truly innovative is when a new institution begins from scratch. Clark Kerr³² suggests that if an institution plans to be innovative, it needs to begin being so the day it hires its first faculty member.

The time when an institution is in desperate financial straits is also a likely time for new innovations. Cases in point might be Parsons College in 1955, or Antioch College when Arthur Morgan took over in 1921.

An indication of timeliness for innovations is seen in the appearance of similar innovations at about the same time in unconnected institutions. For example, the "general education" movement found added support in many quarters following the publication of the famous Harvard report, General Education in a Free Society.³³ Similarly, a variety of honors courses, independent study projects, television experiments, and programs of study abroad were inaugurated in many colleges during the period from 1950 to 1960, largely as a result of the impetus provided by foundation and government support for such programs.

4. The supporters of an innovation have many and sometimes divergent motives. Politics in universities also make strange bedfellows. All complex, institutional behavior rests on what Parsons³⁴ and others have called "multi-motives." The "vested interests" which resist change and the "insurgents" who press for it are both special cases. Lewin's "Force Field Analysis"³⁵ provides an interesting technique for identifying such opposing forces.

5. A promising technique for the introduction of a climate for

cooperative change is the "temporary system,"³⁶ College departments which had gone stale--in which each member pursued his own interests and was indifferent to the need for change in the larger system--have been revitalized by a few days spent together away from the usual setting and under the guidance of someone skilled in laboratory methods. College administrators have been slower than business leaders to make use of these techniques. The laboratory for college teachers and student leaders, held in Bethel, Maine, each June, has stimulated advances in a number of colleges.

Much more common are seminars and workshops in which college teachers and college administrative officers have spent days or weeks sharing ideas and solving common problems. A noteworthy example is the work of the Danforth Foundation, which has conducted for some years three-week summer workshops attended by teams (dean plus three professors) from 25 or 30 colleges. They study new ideas for curriculum and classroom method; they plan projects for back-home improvement; and not the least of the educative values of the program is found in living for three weeks with a selected group of colleagues.

6. Acceptance and implementation of an innovation is facilitated by early involvement in its design. Almost all general discussions of institutional change accept the proposition that those who participate in planning it are most likely to support its introduction. The

classic experiment on this point is Coch and French's "Overcoming Resistance to Change,"³⁷ which was conducted in a textile mill. Involvement of participants is a central theme in the contributions to change theory by many writers, including Argyris³⁸ and Lippit and others.³⁹

Curiously, reports of educational innovation seem to stress participation less than do programs of change in business. Perhaps the prerogatives of professors still prevail, and students are compelled to accept whatever is laid out for them. Clee and Resnick⁴⁰ report on a collaborative experiment in an engineering course which had difficulties in its initial stages because the course had been initially designed "for" rather than "by" its students. Lack of participation in the design may well have been a major source of resistance to the Fund for the Advancement of Education (Ford Foundation) project on teacher education in Arkansas.⁴¹ In Leddy's⁴² report on new dimensions in the curricula of schools of arts and science, it seems that the participating professors were full of zeal; the non-participants looked askance at the innovation. A similar situation was apparent in the New College experiment at Columbia.

7. The first step in enlightened innovation is to move from sensing a problem to diagnosing its causes. The literature on innovation in higher education is remarkably rich in proposals for

improvement and almost entirely lacking in careful, factual diagnoses of the real difficulties for which these remedies are proposed. It is ironic that scholars capable of such acute diagnoses of diseases of men, plants, animals, communities, and civilizations should support or resist changes in their own universities on the basis of data which are so patently inadequate.

Consider "general education." There are all sorts of remedial proposals, but one can search in vain, even in the Harvard report, for data on who lacks what, when, and why. Or take "independent study." Who does it, and under what circumstances? Will the advocated change from professorial lectures to individual projects reach the roots of the students' intellectual passivity and dependence?

Too often organizations will reorganize without ever describing what was wrong with the discarded system. And too often individuals or groups may concern themselves with content issues and ignore the underlying feelings which disrupt their agreements, as in the case of the individual who comes for therapy with the troublesome symptoms rather than the fundamental problem as the center of his attention.

A necessary principle for effecting innovation, whether the client system be an individual, a small group, a large organization, or a community, is that there must be a significant attempt to understand the real problems. Without such diagnoses one runs the risk of much

motion, but little if any gain.

8. Most educational innovation is imitation of a bellwether's actions. Riesman⁴³ has used the metaphor of a moving snake to describe how the middle-range of colleges moves toward the leading group who have already turned away from the point toward which the middle-range group is going. Similarly, the tail is belatedly catching up with the middle group's former position. Riesman also warns that institutions lower in the prestige scale--like lower classes in society--do not welcome the proper place assigned them by the upper-range schools. They want what the prestigious colleges have, and they imitate whenever possible. Junior colleges want to become four-year arts colleges. Four-year teachers' colleges aspire to be liberal arts colleges and then to become universities. Ordinary universities move toward whatever the bellwethers are doing and getting.

The snake image helps to account for the tendency of innovations to come in waves. By the time the following sector has caught up with the leading one, the pacemakers must find a new distinction in order to keep ahead.

Of course, all this is not to deny that good institutions of higher education survey their own needs and select from the publicized innovations those which seem valid and appropriate. Furthermore,

it does help advocates of change to be able to point to a similar activity in a recognized and admired institution.

9. Change in any part of a system is likely to have effects on other parts. Gestalt psychology has sensitized behavioral science to part-whole interaction. In the literature of industrial management cases are frequent in which an increase in self-determination in one department had reverberations in many others. Introduction of automated equipment in another situation created conflicts between sectors whose work-role had been enlarged or diminished. Every college administrator could give cases in point. In some experimental colleges (Meiklejohn at Wisconsin, New College at Columbia) the innovations were perceived as critical of prevailing practice and hence the noninvolved faculty were likely to be hostile.

Several writers have emphasized the concept of strategic points within a system at which changes should be introduced. In higher education this might mean that changes introduced by certain colleges, officials, departments, or professors would receive more attention and bring about more change in other parts of the system than would similar innovations elsewhere.

10. Efforts to introduce innovations in higher education emphasize rational considerations and often ignore other dynamic factors.

It is natural and proper that reports to college teachers, administrators,

and trustees should emphasize ideas and logical arguments. Yet in so doing the importance of emotional factors often seems to be overlooked. A reader of the hundreds of articles in the current periodical literature advocating some innovation in educational procedures will almost never encounter an analysis of the emotional forces which cause people to support or oppose the change. Innovators seem to lump these forces under two general assumptions: that enlightened persons will want to do the right thing when it is pointed out to them; and that "resistance to change" is inherent in all men, but especially in professors. Commentators on political behavior, at least since Machiavelli, have been well aware that a more differentiated view of the emotional forces in favor of or opposed to a position can be helpful in developing strategy.

Later in this chapter we shall examine in more detail the kinds of resistance which are especially potent in academic life.

11. An innovation must reach a required size before it is viable and before it has much influence on the rest of the system. In the development of atomic energy there emerged the concept of "critical mass." Changes in some physical properties proceed slowly to a certain point and thereafter accelerate rapidly, as with an airplane, which needs to attain a high level of speed before it reaches its take-off point. In economics it is recognized that industrialization

of a society can likewise build up to a point where a new system moves ahead rapidly on its own.

The parallel generalization about educational change is that it is likely to proceed slowly up to a critical level, after which it spreads very rapidly. The Inter-University Committee for the Superior Student was dissolved in 1965--an unusual step for an organization promoting educational change--because its leaders believed that the programs for abler students had grown enough so that the movement no longer needed the nurturing of the ICSS or the pressures it had brought to bear for some 20 years.

12. Innovations typically proceed more slowly than might generally be expected; good results take longer to achieve. In a study of industrial change, Bennis⁴⁴ learned that a significant improvement in a corporation was found to require at least a period of from two to five years. Ginzberg and Reilly⁴⁵ make a similar observation: large organizations do not change quickly. Carpenter and Greenhill,⁴⁶ in their "Guidelines for Introducing New Media," report that such introduction "takes longer than commonly expected." Studies of the response of patients to psychotherapy requiring major personality change also agree that significant results usually take several years.

Some of the hopes for quick returns stem from the fact that

reforms are so long overdue before they are begun. A more sensitive response to unmet needs of students and of society might enable earlier planning to be initiated, thereby providing a time-span within which change can grow, be modified, and be stabilized.

13. Too few innovations are carefully evaluated. Patricia Kendall⁴⁷ introduces her study of an experimental course in a medical school with this observation: "The creators of experimental programs often impress one as being men of conviction who have little question about the efficacy of the changes they have introduced." Hence, careful testing seems to them a superfluous nuisance.

Even when evaluation is attempted, most of the research is not well-designed. Measures do not fully accord with the experimental objectives because the most important goals are difficult to measure. Results, good or bad, often are not immediately apparent, but innovators are reluctant to wait long enough to get the full report. The difficulty of matching two colleges or even two classes makes the use of adequate control groups rare. Hence, it is difficult to be sure what factors may have accounted for the changes shown on before-and-after tests. The initial test is itself a stimulus to change which is rarely appraised.

It is, of course, important that the persons involved in the initiation and development of a new program not be asked to evaluate

the program. A change can hardly be appraised as useless by people who have poured blood, sweat, and tears into achieving it.

14. Innovations, accepted and established, become as resistant to change as were their predecessors. Revolutionaries, if successful, turn into conservatives or reactionaries in defense of the order which once was new. The Sons and Daughters of the American Revolution are not in favor of new revolutions. Some colleges which attained distinction because of innovations a generation or two ago still cling to what was, at the time, a useful pattern, despite its inadequacy for today.

This cycle of innovation, stabilization, and fixation contrasts with the idea of self-renewal which Gardner⁴⁸ has proposed in his book Self Renewal: The Individual and the Innovative Society. A self-renewing college would approximate the ideal which Fortune magazine expressed in the title of an issue devoted to the genius of the American economy, "The Continuous Revolution."

Resistance to Innovations

It seems customary in discussions of innovation in higher education to deplore the general inertia and conservatism of colleges and faculties. One experienced administrator compared the revision of college curricula to moving a cemetery. Brown and Mayhew say: "It is difficult to think of an important curricular innovation that was

originated and put into effect by faculty members operating in their corporate capacities."⁴⁹

Our thesis is that if we cease to think of resistance as a general trait of colleges and faculties, we may discern more specific kinds of resistance which, once identified, can often be reduced or overcome.

1. Bureaucratic. Bureaucracy characterizes colleges as much as it does agencies of government and business. Merton⁵⁰ has analyzed the role of the bureaucrat as one in which "means" are valued while "ends" are ignored. It would follow that whatever induces teachers or administrators to give fresh attention to goals and purposes would reduce bureaucratic resistance. The author recalls one faculty meeting in which a radical proposal was under consideration. Several objections to the innovation as impractical had been made when the president intervened. "I would urge the faculty to ignore, for the present, the problems of practical implementation," he said. "I can see plenty of difficulties--perhaps more than any of you now see. But it would be better to decide here whether or not the proposal is educationally sound. If it is a better way to educate our students, I'll find some way to administer it." He wisely turned attention away from bureaucratic barriers and toward the basic policy issues.

2. Identification with subject-matter disciplines. The loyalty of most university professors to their discipline transcends loyalty to the institution at which they teach. They are primarily scholars in a science, language, period of history, or the like. They happen to be teaching at the moment in a given locality, but they are citizens of their specialty. With easy mobility to posts in other colleges or research institutions, they may take little interest in local politics, campus life, or faculty committees. They reject participation in new, integrated, interdisciplinary courses which would distract them from their career within their own discipline. Colleagues in the same discipline in other universities may be psychologically closer to them than the professor in another field whose office is on the floor directly above. Their advancement depends less on professors in other fields than on professors of their own discipline who may invite them elsewhere. They are jealous of the prestige of their discipline and readily veto any innovations which would lessen its perquisites and progress. The chronic objection that an innovation might "lower standards" is usually a defense of the priority of a certain body of subject matter.

When James Earl Russell became dean of Teachers College at Columbia University about the beginning of this century, he decreed that no professor should be designated by his specialty. All were "professors of education" whether they taught history, psychology,

philosophy, economics, sociology, or administration. This rule-- designed to minimize the constraints exercised by disciplines and departments--lasted about 50 years and covered the period of maximum creativity at Teachers College.

While devotion to one's discipline hinders most cross-disciplinary innovation, it may facilitate the acceptance of some renovation within subject-matter fields. Some examples here are seen in the work of various national commissions and other groups launched in recent years. Of particular note is the work of the Commission on College Physics and of the Educational Services, Incorporated.

3. Costs. All improvements carry costs. Opponents of innovation are likely to cite this fact as sufficient cause for keeping things the way they are, without concern for such questions as whether the change is worth the added cost or whether, in long-range terms, it may produce greater economies. They may point out that grant money is a trap, which will start something but not finish it, leaving subsequent costs to be paid by the college. Another aspect of cost, staff time, may also be used as a weapon against change (and innovators should realize that most innovations do demand more staff time than their advocates realize), though the opponents may be inveighing not so much against an increased use of their time as against an alteration in the ways in which their time is to be used.

4. Self-justification of nonparticipants. Earlier, the sixth of our generalizations stressed the dynamic effect of being involved in designing a change. There is a negative corollary. Those who are not involved often feel moved to criticize, to belittle, and to reject the innovation. This is partly because a new course or a new method is easily seen as a reflection on the old standard courses and methods. In industrial laboratories, men sometimes refer to the N.I.H. factor-- meaning "Not invented here!" They are less challenged to put forth their best efforts to implement and to develop ideas they see as "belonging" to other people or other institutions. Replication of an innovation in a new setting is likely to be less effective than it was for its originators. The journals of educational research are full of reports of experiments which, perhaps because of what is called the "Hawthorne effect,"⁵¹ proved to be improvements over traditional patterns, but which have not brought similar advantages when tried by other educators.

5. "Success" in on-going activities. Bavelas⁵² reports on an experiment in which teachers who regarded themselves and their work as failures showed remarkable improvement after a short period of coaching. The more successful teachers who enroll for in-service training are more resistant to influence. They know that by most standards they are already doing a good job. Some of the resistance to change in excellent colleges is a reflection of the fact that what

they have been doing has brought them prestige and reasonable satisfaction. Some doubt or difficulty, then, is the starting point of readiness to innovate.

6. Age and adaptation. While some older men--Alexander Meiklejohn comes to mind--remain creative innovators, most older professors and administrators develop an adaptation which they would prefer not to have disturbed. At the age when their seniority brings the most responsible chairmanships, they have begun to look toward retirement. Not upsetting the applecart seems the most attractive program. It may be significant that Woodrow Wilson introduced innovation at Princeton by first hiring 50 young instructors.

7. Professional autonomy. Some colleges have a norm of autonomy for each professor in his classroom, which requires virtual consensus for any changes in admission policy, curriculum offering, or more general innovations in method. The consequence is, obviously, great freedom (but no pressure) to innovate in one's own teaching, and a similar freedom to resist changes in the system.

Insofar as these seven causes for resistance to innovation are operative on a campus, the innovator must--if he is to be successful in any but the most superficial ways--be aware of them and function so as to eliminate or reduce them. He must, that is, somehow get his adversaries to discuss any change in terms not of means but of

objectives; he must realize and be able to point out when and to what extent objections to an innovation are rooted in irrelevant disciplinary concerns; he must stand ready to prove that his proposal is worth any added cost, and that it will not add to his colleagues' workload; he should recognize that significant change must be supported by the largest possible number of campus leaders, but also that younger staff members can be of great help in innovation if given the opportunity; he must be able to prove the existence of a need for change, to indicate that some things can be done better; and he must work out ways of operating within the tradition of professorial autonomy, perhaps by setting up a machinery for decision-making which can function well without consensus. In short, though on the one hand the innovator must have the fire and zeal of an imaginative and enthusiastic leader, on the other hand he must possess the patience and sensitivity of a diplomat and psychologist--a rare and uneasy combination. It is small wonder then that we have so few successful innovators!

At a deeper level, we must take account of the forces operating in the larger social system of which higher education is a part. These, as Gould⁵³ points out, make it unlikely that our colleges will become what philosophers, idealists, and artists would like them to be. Materialism and the practical demand for a well-paid job run counter to humanistic values. Our war-making limits the scope of international

cooperation and humanitarianism. Appraisal by size leads to bigger institutions, increased mass methods, and controls which defeat faculty efforts to give individuals self-direction and to foster intimacy.

Present Prospects and Needed Research

The annotated bibliography prepared for this report (see page 87) cites almost 150 articles which deal with the problems of change in education and industry. Only a few of these, however, seek to evaluate in any systematic way the reforms undertaken, and even fewer attempt to analyze the conflict of forces and strategies that come into play in the inauguration of a new project. Of the references cited in the bibliography, only 21 are directly concerned with the process of innovation in higher education. It is one thing simply to undertake change; it is quite another to seek to evaluate the effects of such change or to try to gain, through research, a better understanding of the necessary strategies involved in the inception and adaptation of change.

There is good evidence, however, that the tide of interest in research on the innovative process is flowing. The behavioral sciences are contributing much to a more intelligent grasp of the dynamics of change, and journals such as Applied Behavioral Science, Transaction, Human Organization, Human Relations, Behavioral Science, The American Behavioral Scientist, Social Issues, Journal

of Communication, Administrative Science Quarterly, The Journal of Creative Behavior, and Conflict Resolution are becoming increasingly influential in shaping administrative policies. On an organizational level, a number of colleges have established institutional research offices of their own, and several universities--including the University of California at Berkeley, the University of Michigan, and Teachers College at Columbia--have established major centers for the study of higher education and for research and development in higher education. In other developments, the Cooperative Project in Educational Development is coordinating a number of research and development programs at the University of Michigan, the University of Chicago, Columbia University, Boston University, Newark State College, and Leslie College; Indiana University in 1966 established a National Institute for the Study of Educational Change; and 10 colleges have recently banded together to form a national organization known as the Union for Research and Experimentation in Higher Education⁵⁴--the first of its kind--to encourage research and experimentation in higher education.

It is clear that many of the generalizations in this essay have necessarily been drawn from research outside the field of higher education. But it is also clear from the developments just cited that higher education is itself moving toward the development of a better "science" for the understanding of change. If the tide

continues to flow in this direction, the prospects are that in a few years another review will be able to cite scores of useful studies analyzing innovative processes in higher education.

IV. PRIORITIES

by James P. Dixon

It is hardly necessary to defend the proposition that undergraduate education will change in the decade ahead. A number of factors guarantee that it will, including Federal legislation widening educational opportunity, the geometric build-up of pressure from improved quality in the secondary schools, the insatiable demands of science and technology, the need for management of increasingly complex organizations, the quest for social justice, and the increasing secularization of Western ideology.

A more pertinent and vexing question is whether these changes can be effected by conscious decisions (producing the kind of change we might call innovation): i.e., whether some useful criteria can be evolved to identify priorities of innovation which can be publicly defended as more than mere expressions of prejudice or of lip-service to political action.

I start with the assumption that the kind of education that is wanted in this country is that which does something for people rather than to people. Man, we say, is distinguished from the

inorganic universe and from the animals by his high order of intellect and reason. Through the exercise of these functions--and particularly because of his ability to use abstractions in solving the problems of his survival--he has developed complex systems for the utilization of nature and of his fellow man. Education, we say, is the process of developing skills, techniques, and habits of thinking and acting which contribute to this process of utilization. Defined in these terms, education does not guarantee survival of either the individual or the race, nor does it erase the possibilities of anxiety or death. It merely equips the individual to function within the ecological system of the planet and offers him, on the one hand, the opportunity to learn the rote behaviors demanded by the system, and, on the other hand, the opportunity to "hook in" his own intellect--to appropriate at the conscious level a part of the system for his own. (A basic example of the latter would be the student who knows that if he wants to work independently on a subject he can "hook into" the college system, which provides him with professors, fellow students, meeting rooms, a library, and the like. At a more complex level, students at colleges throughout the country have utilized their campus "systems"--the prestige of a campus as a forum, heterogeneity of the student population, visiting political figures or experts, and duplicating machines--in their attempts to deal with the dilemma of Vietnam. At a still more complex level, the United Nations can be seen as a sophisticated

system which each member country attempts to utilize in ways appropriate to that country's needs.)

Education in the liberal arts, which we believe to be the unique backbone of undergraduate study, is concerned with these objective (intellectual, rational) functions; but it is also concerned subjectively with the confrontation in value conflicts that characterizes human life. By direction or non-direction, by conscious management of conflict or by catastrophe, liberal arts educators seek to set up environments where the values necessary to maintain life can be identified--the values which for the most part persuade against self-destruction and govern this objective process of utilization. At work here is a pervasive (and in some ways, perhaps, arrogant) view that values can be identified and applied as a part of the process of education. Here we are concerned not with objective processes, but with introspective concerns of enormous significance.

Such concerns intensify an already existing emphasis on individualism (expressed both as individual autonomy and individual responsibility), nurtured by identification with heroic figures in the Judeo-Christian tradition as well as by Western concepts of psychiatry. This individualism gains support from (and at the same time helps create) a perception of social organization as Satanic--a perception which encourages (or at least permits) the view, say, that politics

can be organized to perpetuate mere prejudice or that the demand for social perfection can reduce human behavior to the level of an automaton. (Such views are seen operating today, to cite one general example, as forcing men, against their wills, to act destructively toward other men.) In addition, the revolution in transportation and communications may lead--insofar as the increased physical, verbal, and graphic mobility is available to individual choice--to an acceleration of the widening differences between individuals. Old orthodoxies, based upon the needs of a less mobile, more poorly informed culture, may disappear. History teaches us that new orthodoxies will appear; however, the role of innovation in education is not to bring these new orthodoxies into being, but to grapple with them when they do arise.

If this trend toward individualism does in fact exist, how does it inform the choice of alternative innovations in higher education? For one thing, it suggests that we should encourage trends toward reshaping curricula to be responsive to individual intellectual, vocational, and emotional needs. It also suggests that we be responsive to the associated trends toward evaluation of educational performance that expresses outcomes relative to individual growth and development and be opposed to externally imposed standards.

There will be difficulties here. For one thing, institutions

have in the past been so uncertain of their ability to describe and defend their missions publicly that they have hidden their unique character behind the facades of accreditation and catalogue jargon. When one views these apparently similar institutions from the back alleys, as some studies are now trying to do, one finds that they are as different from one another as the stores on Main Street. This suggests that if the innovations needed to improve flexibility for the individual student are to be operative, there must be innovation also in the manner in which institutions present themselves. For if effective utilization of the idiosyncratic quality of an institution depends on the ability of the student (and of the faculty) to perceive clearly what the nature of its distinctiveness is, then we must move quickly away from such bland indicators as "catalogues" and the insistence on test scores as criteria for admission (do all schools really want the same kind of student?). On this same point, colleges and universities would do well to make better use of the mass media in projecting particularized images.

More important, however, than the image an institution projects is what it is doing internally to justify this image. Here we might refer to such things as changes in the selection and training of faculty. Experimental colleges have found that it is difficult to maintain a faculty which can sustain the experimental model. It may be that faculty should be chosen for their capacity to work in a committed

fashion with a given institution. But there is also the fact that many faculty do not seek work in a single institution as their life mission, and many subscribe to the notion that the right to academic freedom has prior claim over the responsibility for institutional commitment. The point of equilibrium in these tensions is usually one where overtly the curriculum is defined as a creation of the faculty, while covertly administrators and dissenting faculty try to maintain change. To the degree that such an equilibrium is inhibitive of or inimical to necessary innovation, the selection and training of faculty will be an important consideration in the coming years.

Another factor will have an effect on faculty and administration alike. With the increase of public support for education, and particularly with the extension of that support to enlarge the size of the public establishment, it seems inevitable that the views of groups outside the institutions--parents, public, and politicians--will increasingly need to be accommodated. Autonomy for both faculty and administrators in the determination of curriculum may be reduced and the operative definition of academic freedom altered. Those aspects of academic freedom that relate most closely to concerns for conditions of employment and the right to participate in institutional affairs may very well be increasingly managed through traditional labor-management devices, or perhaps by the development of public licensing for the scholar. Those aspects that deal with the competency

of faculty to participate in institutional affairs will be dealt with in some other form--probably by an increase in in-service activity and a redefinition of faculty participation in educational change. Here there would be an increased emphasis on this activity as professional, as opposed to the present pattern which tends to define such activity as an institutional chore. (And chore it is, if one looks at the myriad committees, task forces, and commissions which now operate in our undergraduate faculty structures.) The priorities for innovation, I am saying, should take advantage of the need to increase the capabilities of faculty members as teachers.

Another trend which deserves to be supported as desirable in keeping educational purpose modern and in sustaining the pluralism of institutions is that toward increased participation by students in the definition and execution of the mission of the college and university. Much of the criticism hostile to this trend assumes that student participation would be a radical force, in the sense that it would turn academic affairs away from the traditions of rigor into a chaos where quality would be judged, if at all, on a situational basis. There is ample evidence to suggest that quite another interpretation is possible and that, in fact, students want not so much to undermine the classical traditions of quality as to add a new dimension to the definition of quality--a dimension that might be called relevance to both the personal and the social situation.

Faculty members are not equally concerned with this relevance; their definitions of objectivity require detachment. Without arguing the pedagogical merits of the situation, it seems clear enough that this kind of stand-off tends to diminish the power of student idealism as a source of energy for constructive change.

Perhaps more important than student participation in making policy is student participation in carrying it out. For to the extent that human life is seen less and less as moved by divine purpose or, indeed, seen less and less as a necessary phenomenon in the ecology of the universe, the purpose of living becomes participation in problem-solving. (Adlai Stevenson, in one of his last addresses before an academic community, alleged that it was not moral to propose a reform without indicating the ways in which the reform would be carried out. To which one may add: or without being prepared to participate in carrying it out.) I feel so strongly, as a matter of fact, about the importance of student participation that I am persuaded that no public support of innovation should be undertaken in institutions which do not provide for such participation, at the very least at the policy level of the innovative process.

Of course, it requires some courage to place students in teaching roles, especially in undergraduate settings now associated with universities. But perhaps such idealism is justified; for in the

emergent Western culture it is possible to hypothesize that knowledge of the skills of a teacher should be as commonplace as knowledge of the skills of a parent, a citizen, or a particular kind of worker.

Then, too, there are less philosophical reasons for using students as teachers. The outcomes of experimentation of the sort conducted by Educational Services, Incorporated, suggest that good learning occurs when there is ambiguity in the definition of the role of teacher and learner--or, more properly perhaps, when the teacher sees himself also to be a learner and the learner sees himself also to be a teacher. Further, at a purely economic level, if we are to afford a range of specialized knowledge at the undergraduate level (that is, if we are not to be turned away from quality by the pressure of numbers), we will need to do so within the historic conservation of the scholarly tradition. This means we shall need more teachers, and here the ambiguity I refer to can make not only philosophical but fiscal sense.

Of course, what is said of the use of the undergraduate as teacher applies also to the graduate student, and in a contrary direction even to the layman. Priority, I am saying, might well be accorded to those innovations which increase the complexity of the faculty mix within the undergraduate institution.

If the composition of the faculties is to be made more heterogeneous, it may well be important to also increase the heterogeneity

of student bodies. The political arguments for so doing hardly need to be repeated, particularly in a period of active social reconstruction. But it appears desirable also on other grounds. The more diverse the student body, the greater the challenge to broaden the curriculum; and evidence suggests that the success of an undergraduate institution in serving its educational mission is closely related to the number of alternative routes for success that exist within the program. The larger the number of these routes, the greater the likelihood of success for the individual student.

Indeed, in order to place themselves under increased pressures for managing a diversified student body, some colleges have deliberately sought to draw students from social classes other than those that were formerly dominant in their operations. In understanding why no distinction should be made between the public financial support of students in public or private institutions of higher learning, this argument for diversity may be more compelling than the argument for survival. Clearly, there is room for creative innovation in managing the evolution of public policy for financing higher education.

Much of what I have said thus far suggests that there is a high priority for supporting those experiments which show promise of increasing the flexibility and decreasing the rigidity of the educational process, with emphasis on the interpersonal relationships between

faculty and students which might be encouraged toward these ends. Let me now move to another urgent requirement: extensive changes in curricula. These are needed for two reasons. The first, as I have already noted, is an increased emphasis on the function of formal education to prepare students to solve problems of real life at both a personal and a social level. The second, which obviously overlaps the first, is the fact of our entry into an age of communication which may well expand the physical, intellectual, and spiritual freedom of the human race to an extent not known since the invention of the printing press.

Let me give one example of the first point. In the United States today we are at the threshold of a new polity for man. At the national level we are a welfare state which socializes the economic benefits of a privately administered system of science and technology. The design of the formulas for distribution of these benefits and the creation of roles designed to maintain equilibrium among the competing demands for use of economic, natural, and human resources are tasks for the public polity. Under these circumstances there are certain personal and social needs which have a high order of priority, and it seems logical that some of the efforts of educational change should be directed toward the fulfillment of these needs. Pressing among these needs are ways of knowing how to use time, how to make life wholly (in the Pauline sense) vocational, how to use one's knowledge

and skill to operate within the social system, how to discover relevance in one's personal life.

The availability and continued viability of such knowledge is complicated by the fact that change is the order of our time. This flux seems to give life a tenor which more and more makes imperative the existence of established supportive value structures. If change continues at its present rate, it may be necessary for educational institutions to provide some of these supportive structures. One way of doing so would be for educational institutions to reject the idea that they serve a student for a specified number of years; in place of this notion these institutions could show a willingness to make themselves available to any student who has ever enrolled and for as long a time as he wishes.

Innovation in this direction would help define the uses of time, would make individual changes in vocational emphasis easier, and would provide an opportunity for people to learn about changes in the social system. The academic parallel here is adult education; the value-oriented parallel might be the church. There is evidence indicating that colleges (like churches) vary in ethos, while at the same time it appears that the particular ethos of a given institution changes slowly. Given this fact, the firm and potentially continuous connection of a person with a value-oriented institution such as a

college or university could afford a reassurance to some individuals which would enhance their ability to function in the midst of change. Priority should be given, then, to innovations of this kind, which appear to strengthen comprehension, continuity, and coherence in the formal education of individuals.

At the level of social values the needs of our culture still seem, despite much debate, to be those of a rational, democratic humanism. As James Perkins said recently, education must be "germane to the condition and needs of man." The kinds of change in behavior which seem to be called for in a rational, humanistic democracy are those which will tend toward such things as peace, control of population, and the safe use of natural resources and synthetic technology: in short, toward the improved conditions of human life.

There still seems to be a conviction that one appropriate way to use education as a force for human social change of this kind is to conduct it within the value framework of the liberal arts. Stated in operational terms, this means that educational institutions should deal with the appreciation of reality, with preparation for citizenship, and with the transmission of our cultural heritage. This tradition of the liberal arts, with its optimistic idea for the improvement of the human condition, is deeply imbedded in the undergraduate structure of American education. But the carrying out of this tradition is said

to be seriously handicapped by the development of specialization and professionalism in scholarship. Some critics would say that the undergraduate departments are the villains; others that the common enemy is the graduate school; still others would single out the inadequacy of interdisciplinary communication. Such conjectures must have some bearing on the subject of curriculum change.

The second major force pressing for curriculum change--new possibilities for communication--presents us with a challenge that is the more striking if only because it is newer and more tangible. We are entering an era of mass communication at the oral and visual level with orders of magnitude increasing in both the speed and complexity with which it is possible to communicate facts, concepts, and attitudes. For example, the Wall Street Journal reports:

By the year 2000 you will be able to do just about everything but shake hands or kiss your wife via electronic communication. You will, for example, be able to sit in your office and hold a face-to-face chat with a business associate on the other side of the globe. While you're talking you can instantaneously transmit a facsimile of a blueprint or contract for inspection. From your home in the U. S. you will be able to examine--in color--a painting up for sale at a London gallery. Or you can help your school-age son with his essay on the causes of World War I by transmitting a request for a bibliography on the subject to the local library's computer, which would respond by causing a reading list to be printed out on a device in your home.⁵⁵

Such things are now technically possible; they await refinements in technology and an economical (to the user) system of connections. To these, of course, could be added items already being used:

audio and video tape, large-screen television, computers, learning resource centers, new presentation and feedback systems, electronic blackboards, and a number of other developments which may provide the basis for significant innovation in teaching and learning. For the first time, that dream of the small liberal arts college--that the world be its campus--may be close to genuine fulfillment.

Under such circumstances, higher education cannot avoid being radically changed. The need to be on "campus" will be diminished; the range of information available for learning will be greatly increased; interpersonal relationships may be radically affected. About what the conduct of education will be, one can only speculate. But the need is urgent now for educational institutions to develop their capability to work with the new systems, a capability which requires not only the ownership of hardware and the presence of trained personnel, but also the opportunity and the willingness to experiment.

One cannot close a discussion of innovation in higher education without acknowledging the need to support individuals and institutions in creative endeavors. At this point innovation connects with marketplace economics (indeed, one wonders if the two are ever very far apart!). Most educational institutions have not built resources into their economic structure to finance educational research and development. Because of this, money for this purpose must come from

"outside" sources--governmental or private. There is always the danger that such funds are coercive of the value structure of the institution. In addition, the availability of such money is subject to a good deal of negotiation, which may improve the definition of desired change, but which also may leave much creativity unsupported. Since, in the last instance, priorities for innovation are confirmed by decisions about the use of money, it is vital--if the useful heresies are to be uncovered and implemented--that institutions allocate educational research and development funds from their own resources.

This essay has not attempted to list all of the priorities which could be established for educational innovation. My intent has not been to create a complete blueprint for higher education in the future, but to give added exposure and support to a point of view that must come more and more to occupy our attentions. Implicit in this point of view is the assumption that forces for radical change in our colleges and universities are now at work. There is no longer a question of whether there will or should be change; the question is how the change will come about. If we regard our society as a system, how can we utilize its radical energies to produce planned, coherent, productive change? How can we avoid the wastefulness and danger of change by random processes of accommodation, time-serving, and tinkering? The world is not waiting for educators to decide whether or not they are in favor of change; it keeps moving. Whether its educational

course will be in the best interest of our culture may well depend on whether we get aboard or get left behind.

FOOTNOTES

1. Phillip Coombs, The Technical Frontiers of Education, p. 7-8. Los Angeles, U.C.L.A., 1960.
2. Paul Heist and others, "Selectivity and the Impact of the Colleges." Berkeley, Calif., Center for Research and Development. (Report in progress.)
3. Quoted by the Editors of Education U.S.A., "Education: The Talk of Wall Street," The Shape of Education for 1966-67, p. 5. Washington, D. C.: National School Public Relations Association, 1966.
4. "Technology is Knocking at the Schoolhouse Door." Fortune, p. 120-21. August, 1966.
5. Higher Education and National Affairs, p. 11. February 3, 1967.
6. Ibid., p. 5.
7. C. E. Silberman's position is even stronger: "Rarely have U. S. corporations assumed a role so fraught with danger for society, as well as for themselves, or so filled with responsibility and opportunity. For over the long run, the new business-government thrust is likely to transform both the organization and the content of education, and through it, the character and shape of American society itself." "Technology is Knocking at the Schoolhouse Door," p. 122.
8. Harold Howe, II, "The New Shape of Education," University Review, vol. 1, No. 1, p. 5. Fall, 1966.
9. From a speech, "Interpreting Student Revolt and University Reform," reprinted in Pacific Review. Winter, 1965-66.
10. "A College Plan Designed for Flexibility," The Challenge of Curricular Change, p. 54. New York, College Entrance Examination Board, 1966.
11. Edward LeFevour, in Mills College Magazine, p. 10. October, 1965.

12. M. D. Stanford, p. 5. Stanford, Calif., Stanford University, 1966.
13. "Seminars for Freshmen." Mills College Magazine, p. 7. Autumn, 1964.
14. "The New Curriculum at Macalester College." Macalester College Catalog, 1966.
15. Florida Presbyterian College, vol. 7, No. 9, p. 11. October, 1965.
16. The College of Wooster, 1965-66, p. 61.
17. "Special Programs," Bulletin of Yale University, p. 15. March, 1966.
18. Bard College, 1965-66, p. 18.
19. Nasson College Bulletin: The New Division, 1965-66, p. 6.
20. Goddard College, vol. 30, No. 4, p. 19. October, 1965.
21. "Abstracts of Instructional Developments at CIC Institutions," p. 3. Report No. 1. Ann Arbor, Mich. Spring, 1966.
22. Bowdoin College Bulletin, No. 361, p. 23. June, 1966.
23. Allan M. Cartter, "Innovation in Higher Education: Trends and Problems." Address to the Danforth Foundation workshop, Colorado Springs, Colo. July 5, 1966.
24. Fritz Machlup, The Production and Distribution of Knowledge in the United States. Princeton, N. J., Princeton University Press, 1962.
25. Kenneth Boulding, The Organizational Revolution. New York, Harper and Bros., 1953.
26. Goodwin Watson, Social Psychology: Issues and Insights. Philadelphia, J. B. Lippincott, 1966.
27. David Riesman, Constraint and Variety in American Education. Lincoln, Neb., University of Nebraska Press, 1956.
28. James A. Perkins, The University in Transition. Princeton,

N. J., Princeton University Press, 1966.

29. Ibid.

30. R. E. Peterson, "The Scope of Organized Student Protest in 1964-65." Report to American Psychological Association. September 3, 1966.

31. Cartter, op. cit.

32. Clark Kerr, The Uses of the University. Cambridge, Mass., Harvard University Press, 1963.

33. Committee on the Objectives of a General Education in a Free Society, General Education in a Free Society. Cambridge, Mass., 1945.

34. Talcott Parsons, "The Problem of Controlled Institutional Change," in Essays in Sociological Theory, p. 238-74. Revised edition. Glencoe, Ill., Free Press, 1954.

35. See Kurt Lewin, Field Theory in Social Science. New York, Harper and Bros., 1951.

36. Matthew B. Miles, "On Temporary Systems." In Miles, ed., Innovation in Education. New York, Teachers College, Columbia University, 1964.

37. L. Coch and J. R. P. French, "Overcoming Resistance to Change." Human Relations, vol. 1, p. 512-32. 1948.

38. Chris Argyris, Organization and Innovation. Homewood, Ill., Dorsey, 1965.

39. Ronald Lippitt and others, The Dynamics of Planned Change. New York, Harcourt Brace, 1958.

40. J. E. Clee and J. B. Resnick, "Collaboration in Teaching and Learning: An Experimental Course for Engineering Students," in Miles, ed., op. cit., p. 79-96.

41. Richard Colvard, "The Colleges and the 'Arkansas Purchase' Controversy," in Miles, ed., op. cit., p. 117-55.

42. J. F. Leddy, "New Dimensions in the Arts and Sciences Curriculum," in Herman A. Estrin and Delmer M. Goode, eds., College and

University Teaching, p. 285-86. Dubuque, Iowa, William C. Brown Co., 1964.

43. Riesman, op. cit.

44. Warren G. Bennis, "Theory and Method in Applying Behavioral Science to Planned Organizational Change." Journal of Applied Behavioral Science, vol. 1, p. 337-60. 1965.

45. Eli Ginzberg and E. W. Reilley, Effecting Change in Large Organizations. New York, Columbia University Press, 1957.

46. C. R. Carpenter and L. P. Greenhill, "The 'New' Media," in S. Baskin, ed., Higher Education: Some Newer Developments, chap. 6. New York, McGraw-Hill, 1965.

47. Patricia Kendall, "Evaluating an Experimental Program in Medical Education," in Miles, ed., op. cit., p. 343.

48. J. W. Gardner, Self Renewal: The Individual and the Innovative Society. New York, Harper and Row, 1964.

49. H. S. Brown and L. B. Mayhew, American Higher Education. New York, Center for Applied Research in Education, 1965.

50. Robert K. Merton, Social Theory and Social Structure. Revised edition. Glencoe, Ill., Free Press, 1957.

51. G. C. Homans, The Human Group. New York, Harcourt Brace, 1950.

52. Alex Bavelas, "Morale and the Training of Leaders," in G. Watson, ed., Civilian Morale, p. 143-65. Boston, Houghton Mifflin, 1942.

53. S. B. Gould, "Dilemmas in Education: The Basis for Revolution," in Education Research Bureau, Keeping Abreast of the Revolution in Education. Washington, American Council on Education, 1964.

54. Headquarters for the union is Antioch College, Yellow Springs, Ohio. Member colleges of the union are Antioch, Bard, Goddard, Hofstra University, Illinois Teachers College-North, Monteith, Nasson, Sarah Lawrence, Shimer, and Stephens.

55. Jerry E. Bishop, "Shape of the Future." Wall Street Journal. January 15, 1967.

ANNOTATED BIBLIOGRAPHY

This bibliography prepared by Goodwin Watson, has been organized around six major categories. Section A draws on 23 references most directly concerned with the process of innovation in higher education. Section B is titled "Administrative Wisdom Regarding Innovation in Higher Education." Section C reviews principles of organizational change developed in business and industry. Section D reviews studies dealing with the conceptualization of the change process. Section E presents case studies of specific innovations and articles describing and evaluating particular kinds of educational reform. And Section F outlines a few of the many reports of efforts to improve teaching within the classroom.

A. Research on Innovative Process in Higher Education

1. Atwood, M. S., "Small-scale Administrative Change: Resistance to the Introduction of a High School Guidance Program." In Miles, ed., Innovation in Education, p. 49-78.

This is an anthropological account of the unexpected resistance encountered by a high school principal when he tried to introduce a guidance program. Acceptance of the innovation was related to an increase rather than a decrease in faculty initiative. The article illustrates the technique of interaction analysis in examining the effects of an institutional change.

2. Barber, C. L., More Power to Them: A Report of Faculty and Student Experience in the Encouragement of Student Initiative. Amherst, Mass., Committee for New College, 1962.

Review of experience with "freshman seminars" which explore a limited topic in depth, and of "student seminars" which are led by students as an adjunct to lecture courses. Negative reports from freshman seminars referred to difficulty and confusion at first; superficial and tedious papers; demand on faculty time; skepticism of other faculty. Student seminars sometimes degenerated into bull-

sessions; dissatisfied students hurt general morale.

3. Blanke, Virgil, ed., Newsletter of the Conference on Strategies of Educational Change. Columbus, School of Education, Ohio State University, September, 1965-66.

Summaries of papers prepared for the Washington Conference on Strategies for Educational Change, with announcements of subsequent developments in this field.

4. Carpenter, C. R., and L. P. Greenhill, "The 'New Media.'" In Baskin, ed., Higher Education: Some Newer Developments, chap. 6, p. 128-52.

Carpenter includes a section on "Guidelines for Introducing the New Media," which points out that (1) the right people must sponsor new devices; (2) their introduction takes longer than is usually expected; (3) they must relate to faculty needs by relieving work loads or permitting autonomy; and (4) there must be solid evidence of their effectiveness via demonstration. The authors suggest a research and development unit in each university to work on an applied science of learning.

5. Center for Advanced Study of Educational Administration, Educational Administration Abstracts. Eugene, University of Oregon.

Vol. 1, No. 1, appeared in the Spring of 1966. Section II-C, titled "Initiating Change," reviews studies and articles on this theme. Section III-F abstracts studies on "Governmental Change."

6. Clee, J. E., and J. B. Reswick, "Collaboration in Teaching and Learning: An Experimental Course for Engineering Students." In Miles, ed., Innovation in Education, p. 79-96.

Stimulated by two weeks of participation in the College Leadership Laboratory at Bethel, Me., four students and a professor from Case Institute planned to teach a large ($N=200$) course in Dynamic Systems in ways which would facilitate open communication and close collaboration between teacher and students. Some confusion and delay occurred at first when the instructor was reluctant to initiate changes and other mechanisms for action had not matured. A council of representatives proved ineffective for a time because members felt bound in loyalty to the section which had chosen them and were not free to develop creative solutions. The "contact teaching load" for instructors increased by 500 percent. Subjective evaluations of learning were favorable.

7. Cole, Charles C., Jr., and L. G. Lewis, "Flexibility in the Undergraduate Curriculum." In Winslow R. Hatch, ed., New Dimensions in Higher Education, No. 10. Washington, U. S. Office of Education, 1962.

The author visited 13 campuses to study such innovations as advanced placement, special programs, honors programs, tutorial work, television, and off-campus study. He concludes that flexibility depends mainly on the readiness of faculty; devices are less important than are attitudes; practice lags behind lip-service.

8. Colvard, Richard, "The Colleges and the 'Arkansas Purchase' Controversy." In Miles, ed., Innovation in Education, p. 117-55.

A major innovation in teacher education, with over \$3 million support from the Ford Foundation's Fund for the Advancement of Education, it was envisioned to operate 10 years as a demonstration, but it operated for only six years and graduated fewer than 200 students. The threat to existing programs, institutions, and interests had been underestimated by promoters.

9. Coombs, Phillip, They Went to College Early. New York, Fund for the Advancement of Education, 1957.

This is an evaluation of experiments with plans permitting abler students to enter college before finishing high school. Academic and personality progress proved satisfactory.

10. Evans, R. I., and P. K. Leppman, "The University Faculty and Innovation: Theory, a Research Case History, Implications: A Social Psychological Analysis in Depth." Report to American Psychological Association. September 4, 1966.

At "Metro" University, Instructional Television (ITV) was tried and abandoned. Most professors had mixed feelings but more were opposed than in favor. Testing attitudes with a form of Semantic Differential, the authors found "pro-ITV" professors more experimental in their teaching, less recondite, and more related to student activities, but they had less sense of support from their colleagues. An experiment with the use of videotape in a project for self-improvement of teaching resulted in more favorable attitudes toward ITV, a finding predictable from dissonance theory. In addition to a general factor of resistance to innovation, the research noted factors specific to the particular innovation.

11. Fund for the Advancement of Education, Decade of Experiment.

New York, Fund for the Advancement of Education, 1961.

This study records satisfaction with programs designed to improve preparation of teachers, use of aides, team teaching, and audiovisual devices. The Arkansas experiment, although widely criticized, provided a starting point for dozens of "fifth-year" training programs. An experiment in Texas, using TV to recruit and train college graduates for teaching, produced about 600 teachers, a disappointingly small number at a high per capita cost. The fund supported the cooperation of four colleges in Massachusetts to blueprint a "New College." It also helped Austin, Hofstra, Wayne State, and Harvey Mudd Colleges to develop plans including large-group instruction and self-study. The dynamics of innovation are not examined.

12. Kendall, Patricia, "Evaluating an Experimental Program in Medical Education." In Miles, ed., Innovation in Education, p. 343-60.

"The creators of experimental programs often impress one as being men of conviction who have little question about the efficacy of the changes they have introduced." This study reports one experience in evaluating a newly designed course in medicine, pediatrics, and psychiatry. A first task was to translate broad objectives into measurable specifics. Data show the integrated course did result in attitudes oriented more toward concern with patients as persons.

13. Leddy, J. F., "New Dimensions in the Arts and Science Curriculum." In Herman A. Estrin and Delmer M. Goode, eds., College and University Teaching, p. 285-86. 1964.

The usual experiments, introductory courses, survey courses, and integrated courses, are discussed. Findings are that these courses were begun at the initiative of new deans or presidents, or committees of younger faculty; the zeal of instructors was high, although there was some critical opposition within the faculty; scientists preferred traditional introductory courses, and an inordinate amount of faculty time was spent in consultation.

14. Mayhew, L. B., "The New Colleges." In Baskin, ed., Higher Education: Some Newer Developments, chap. 1, p. 1-26.

The new colleges arise from increased demand, dissatisfaction with traditional institutions, state initiative, religious concerns, attempts to reduce size, and self-interest of men and regions. Major problems are recruiting faculty who believe in the new ideas, pressures for vocational preparation, and loyalty to disciplines. Future need is for experiments with urban institutions for commuting students.

15. Mesthene, E. G., "On Understanding Change: The Harvard University Program on Technology and Society." Technology and Culture, vol. 6, p. 222. 1965.

This is the prologomena to a \$5 million program of collaborative research at Harvard including issues of adapting education to accelerating technological change.

16. Miles, M. B., ed., Innovation in Education. New York, Bureau of Publications, Teachers College, Columbia University, 1964.

This volume includes case studies, theories, and research reports. Most data come from change efforts in elementary or secondary schools. Watson reports the New College experiment at Columbia University; Clee and Reswick an experimental course for engineers; Colvard an experiment in teacher education; Kendall a program in medical education. Miles, in an introductory analysis of the problem, in a chapter on temporary systems, and in a concluding chapter of generalizations, contributes the best theory of educational change thus far published.

17. Peterson, R. E., "The Scope of Organized Student Protest in 1964-65." Report to the American Psychological Association. September 3, 1965.

Questionnaires were sent to 1,000 four-year colleges. The main areas of concern were (a) civil rights and foreign policy (25 percent of respondents); (b) administrative regulations such as hours, dress, etc. (17 percent); (c) free speech (8 percent); (d) instructional deficiencies (7 percent). In general, the institutions that were most active in civil rights were also most critical of the quality of undergraduate instruction. More protest arose in large state universities than in other types of colleges. On a typical issue the proportion of students involved was estimated at 4 to 8 percent.

18. Sanford, Nevitt, ed., The American College: A Psychological and Social Interpretation of Higher Education. New York, John Wiley, 1962.

This volume includes essays which are descriptive and critical of colleges. "Colleges are failing rather badly. They fail to achieve their own stated purposes; and they fail by other reasonable standards of accomplishment." A comprehensive (more than 1,000 pages) survey, based on results of innumerable tests, it reveals constancy and change in the personality of students but gives little insight into institutional structures and their alteration.

19. Sorenson, Roy, and H. Dimock, Designing Education in Values: A Case Study of Institutional Change. New York, Association Press, 1955.

This is a report of the process of reorganization of the Y.M.C.A. in San Francisco. It gives helpful comments on the strategy of change, especially on the value of enlisting full and free participation of all those concerned with leadership.

20. Trow, William Clark, Teacher and Technology: New Designs for Learning. Des Moines, Iowa, Meredith Publishing Co., 1963.

The author advocates a "systems approach" to the introduction of new media. "Any change in any component must be analyzed and evaluated in relation to its effects on and interactions with all other components . . . and on the total system." According to Trow, changes begin with orientation and should be planned in relation to objectives, budget, and space considerations. Staff should be prepared realistically, and the public should be informed. Two pages are devoted to higher education, predicting more use of TV and teaching machines, the abolition of Carnegie units, and less attention being given to transcripts and more to achievement measures.

21. Watson, Goodwin, "Utopia and Rebellion: The New College Experiment." In Miles, ed., Innovation in Education, p. 97-115.

Patterns appearing both in the New College experiment and in most Utopian colonies include ideological primacy, paternalism, escape to freedom, appeal to intellectuals, appeal to rebels, communal cohesion, insecurity, insolvency, insularity, hostility from out-groups, and optimism. When it was decided to close New College, many student-faculty responses resembled historic rebellions.

22. Willits, Joseph H., Excellence and Mediocrity in Colleges and Universities. In press.

This study discusses persons, policies, and practices conducive to excellence in higher education. It analyzes cases of high and low achievement in departments, presidents, trustees, and grants from foundations or Federal or state governments. The concluding chapter, "Institutional Self-Renewal," describes a five-year project at the University of Pennsylvania in which an outside appraiser collaborated with 300 university members who served at first as advisory committees and later reviewed and implemented recommendations.

23. Workman, J. R., New Horizons of Higher Education. Washington,

Public Affairs Press, 1959.

This is a report on Brown University's experimental course on "Identification and Criticism of Ideas" (ICI), 1953-57. Limited to 20 above-average students, the course was supported by a Carnegie Corporation grant. No evaluation is given.

B. Administrative Wisdom Regarding Innovation in Higher Education

24. Association for Higher Education, Current Issues in Higher Education. Washington, 1965.

The report of the twentieth annual conference on higher education, it reviews "Pressures and Priorities" with some case illustrations. No comparative analysis of processes of response to pressures or of establishing priorities is offered.

25. Barton, A. H., Studying the Effects of Higher Education. New Haven, Hazen Foundation, 1959.

A critique of data and analytic methods used in Philip E. Jacob's Changing Values in College, it regards Jacob's pessimistic evaluation of the impact of college on student values as unproved.

26. Berelson, B., Graduate Education in the United States. New York, McGraw-Hill, 1960.

The first section covers the history of graduate education, and the second section offers 19 recommendations. Data from questionnaires sent to presidents, deans, professors, graduate students, and industrial employers are used. The study notes that repeated criticism has brought little progress: innovations are usually regarded as "lowering standards." A center for advanced study in the humanities and a new graduate university to do for the present scene what the University of Chicago did in an earlier period are recommended.

27. Brown, H. S., and L. B. Mayhew, American Higher Education. New York, Center for Applied Research in Education, 1965.

"American college faculty members . . . are typically conservative with respect to the essential educational content and mission of their institutions. It is difficult to think of an important curricular innovation that was originated and put into effect by faculty members operating in their corporate capacities" (p. 56). "Institutions have created offices

of institutional research, which one president has aptly described as a continuing internal audit of the entire educational program" (p. 87). "On the basis of such information, it is hoped, more precise planning will result" (p. 87). Programs of independent study, honors work, work-study, overseas study, courses on non-Western civilization, and residential subcolleges are reviewed.

28. Brubacher, J. S., and Willis Rudy, Higher Education in Transition: An American History, 1936-56. New York, Harper and Bros., 1958.

The American was impelled by every facet of his culture to transform the traditional system which he brought with him from the Old World, the authors state. Democratic values found expression in increased opportunities for education; there was also respect for many varied occupational groups and dedication of the university to the service of an evolving dynamic democratic community. Local autonomy bred variety.

29. Deutsch, Monroe E., The College from Within. Berkeley, University of California Press, 1952.

"Higher Education does not live in a vacuum." Influences stem from donors and legislators, newspapers, resolutions from organizations with some influence. The author would like scholars to be more esteemed than corporation presidents or sports heroes. He speaks of vulgarization of campus life, and maintains that "activities should be played down" in the interest of "elevation of standards." "The opinions that have developed in the mind of one man after long years of experience may not be uninteresting and may even be useful to others engaged in college work," he says.

30. Flexner, Abraham, Universities: American, English, German. New York, Oxford University Press, 1930.

This is a critique of changes that, in the author's view, have cheapened, vulgarized, and mechanized colleges. Flexner would abolish schools of business, journalism, etc.

31. Frankel, Charles, ed., Issues in University Education. New York, Harper and Bros., 1959.

Changes arise from the changing demands of our society; they are not invented on the campus. The author states that changes "arise out of discordant traditions, internal conflicts of interest and external collision with other institutions; out of the emergence

of new needs and new resources, and out of the interplay of human ideas and ideals with the refractory conditions of human nature and the social and physical environment."

32. Fuller, R. Buckminster, Education Automation: Freeing the Scholar to Return to his Studies. Carbondale, Ill., Southern Illinois University Press, 1962.

This is a highly personalized discourse by a highly creative thinker.

33. Gould, S. B., "Dilemmas in Education: The Basis for Revolution." In Education Research Bureau, Keeping Abreast of the Revolution in Education. Washington, American Council on Education, 1964.

The author sees four great dilemmas: (1) masses of students: individualized education; (2) need to control large numbers: need of youth for self-direction; (3) conformity pressures: desire for integrity; and (4) education for peace: a war economy. The main motivations in American education--materialism, scientific exploration, and activism--do not promise good solutions for the basic problems, he believes.

34. Halmos, Paul, ed., Sociological Studies in British University Education. Keele, England, University of Keele, 1963.

Sir Eric Ashby's introduction is critical of academic decision making, stating that it is based on "dubious assumptions, scrappy data, more hunch." "Societies of academics have declined to pursue knowledge about themselves," Ashby feels.

35. Henderson, Algo D., Policies and Practices in Higher Education. New York, Harper and Bros., 1960.

This is a sensible and practical presentation of college objectives, program, faculty, administration. The words "change" and "innovation" are not in the contents or index, but institutional self-surveys are recommended. We are urged "to seek data beyond anything required heretofore." "A principal stumbling block in the way of progress is the failure of college teachers to examine" critically their teaching techniques. Henderson recommends such group devices as "6 6" and "role playing."

36. Hill, Alfred T., The Small College Meets the Challenge. New York, McGraw-Hill, 1959.

The executive secretary of the Council for the Advancement of Small Colleges tells how the CASC has helped its members examine themselves, test student achievement, achieve visibility, improve management, and remain solvent. "They are the true 'Operation Bootstrap,'" he says of the member colleges.

37. Jencks, Christopher, "New Breed of B.A.'s" New Republic, vol. 153, p. 17-21. October 23, 1965.

In research, where "outside interventions" are the rule, universities have a brilliant record, Jencks maintains. In their teaching, with a minimum of "outside intervention, colleges have stagnated." "Most administrators are extremely sympathetic to curricular innovation. Control over the curriculum, however, is in the hands of the faculty. The inadequacies of the curriculum are, I think, a direct reflection of this paralysis of faculty government The Byzantine irrelevance of faculty politics cannot help but be mirrored in the curriculum." Jencks proposes grants from the National Science Foundation for teaching projects, particularly for off-campus activities that are closely related to important social concerns.

38. Kerr, Clark, The Uses of the University. Cambridge, Mass., Harvard University Press, 1963.

This is a lively and insightful account of the historical development of universities and their response to contemporary social pressures. "The university has been a remarkably unstudied institution until very recently," Kerr writes. "The external view is that the university is radical; the internal reality is that it is conservative. The internal illusion is that it is a law unto itself." Kerr favors leaving inventiveness to the individual within the protection of a conservative institution, but "the great universities of the future will be those which have adjusted rapidly and effectively." He sees the university president as a "mediator-innovator." The changes that are most widely supported by faculties are those toward "overcoming fractionalization of knowledge" and making administration more human and personal. "Change comes more through spawning the new than reforming the old."

39. Machlup, Fritz, The Production and Distribution of Knowledge in the United States. Princeton, Princeton University Press, 1962.

The production, distribution, and consumption of knowledge accounts for 29 percent of GNP. Knowledge production is growing at double the rate of the rest of the economy.

40. Mayer, Frederick, Creative Universities. New York, College University Press, 1961.

"The real battle in higher education today is between the conformists and those who cherish a creative view of life A real university is a creative center which anticipates the future and which has a sense of conscience and moral obligation."

41. _____, "Universities with a Conscience." In Estrin and Goode, eds., College and University Teaching.

"Will they [colleges and universities] be able to cope with the vast influx of students? Are they enthusiastic about the opportunities which such expansion will develop? Are they receptive to creative new ideas? The answer to all these questions must be largely in the negative."

42. McCarthy, Charles, The Wisconsin Idea. New York, Macmillan, 1912.

The author presents the idea--new in 1912--that the university exists not just for pure scholarship or for its own students, but to serve all people in the state or region.

43. Perkins, James A., The University in Transition. Princeton, Princeton University Press, 1966.

This book contains a number of stimulating essays. The author contends that the university today is no longer a self-sufficient community of scholars, but is part of various larger systems. Innovation comes increasingly from outside the university, from Federal, state, and regional units, from foundations, etc. Attempts to preserve balance and integration may stifle creativity; a better means is to maintain "constructive imbalance." There are three essential functions for the university: research, instruction, and public service. Advances in any one of these areas should strengthen the other two, the author believes. Perkins makes many other highly rewarding observations.

44. Prator, Ralph, The College President. Washington, Center for Applied Research in Education, 1963.

"Tremendous support must be given to institutional research in colleges if the challenge of the future is to be met," the author states. He urges a chart predicting needs for the year ahead rather than the customary annual reports. He also suggests annual or semi-annual workshops to keep college presidents abreast of changes.

45. Riesman, David, Constraint and Variety in American Education. Lincoln, University of Nebraska Press, 1956.

Riesman formulates an image of modern colleges as a snake-like procession in which the middle portion is attempting to catch up with the head and the tail is trying to catch up with the middle. "What innovation there is seems to have been shifted out of the president's hands into those of the deans." Opposition to the behavioral sciences, Riesman writes, comes from persons who are unable to examine their lives or culture with objectivity.

46. _____, "Planning in Human Education: Some Notes on Patterns and Problems." Human Organization, vol. 18, p. 12-17.

"For the first time in American history, virtually no college or university president is a serious spokesman for educational ideas on the national scene," Riesman writes. The typical president has become a cautious manager, placing himself above the battle; he concentrates less on obvious leadership and more on organizational maneuvering. The author also notes that the striving of institutions to model themselves on those higher in the prestige scale illustrates the fact that the less advantaged do not want what the privileged prescribe but what they have.

47. Robb, F. C., "Innovation and the Education of Teachers." In Educational Records Bureau, Keeping Abreast of the Revolution in Education. Washington, American Council on Education, 1964.

Robb states that the two principal types of innovators--those who invent new technical apparatus and those who invent new ideas and policies--are in short supply. He suggests eight social trends which are having a profound impact on education. These are the decline of religion, teenage tyranny, the decline of rural communities, technological advance, an integrated society, the population explosion, international tension, and the mass media. Current innovations in colleges, he believes, are not commensurate with these challenges.

48. Rudolph, Frederick, The American College and University: A History. New York, Alfred A. Knopf, 1967.

"Except on rare occasions, the historic policy of the American college and university" has been "drift, reluctant accommodation, belated recognition that while no one was looking, change had in fact taken place."

49. Ruml, B., and D. H. Morrison, Memo to a College Trustee.

New York, McGraw-Hill, 1959.

The authors, men with unusually creative minds and broad experience in other fields, apply some of their thinking to the problems of colleges.

50. Stoke, H. W., The American College President. New York, Harper and Bros., 1959.

"A former president of a major Eastern university once said that when he assumed office he faced a formidable group of deans whom he decided to try to outlive rather than remove Years later he believed he had made the wrong decision." Yet, the author states that if major officials change with an incoming president, there is a chance that good men might refuse their services, while weaker men would tend to become sycophants.

51. Stroup, Herbert, Bureaucracy in Higher Education. New York, Free Press of Glencoe, 1966.

The author examines the structure and functions of the college, viewing them as examples of bureaucracy. He discusses hierarchy in the college as a system, and he also deals with such topics as myths, power, charisma, ceremonial behavior, rules, paper work, red tape, and conservation. There is little exploration of innovation as such.

52. Tead, Ordway, Trustees, Teachers, Students: Their Role in Higher Education. Salt Lake City, University of Utah Press, 1951.

Under the heading "Steps Ahead," Tead discusses general education, the need for greater activity of the student-learner, the value of an improved study of religion, better recognition of vocational aspects of all subjects, the necessity of subjecting professors to critical visitors, and faculty committees on long-range planning.

53. Wilson, Logan, ed., Emerging Patterns in American Higher Education. Washington, American Council on Education, 1956.

In 34 separate essays, leaders in higher education discuss mainly systematics: state systems of education, interinstitutional consortia, national associations, and educational policies. Most germane to our topic are essays by Perkins, who notes that innovations in universities have come largely from outside them; by Wilson, who urges managerial studies; by Axelrod, who inventories trends of change since 1959 and stresses "deconforming" in students and

curricula; by King, who records the evolution from normal schools to state colleges; by Wilson, who lays down the basic premises for a national policy of education; and by Gardner, who appraises the relation of higher education to the Federal Government.

54. Wriston, Henry M., Academic Procession: Reflections of a College President. New York, Columbia University Press, 1959.

Wriston believes that flexibility and the ability to perceive needed changes are improved when competent administrative officers are frequently shifted to new duties.

C. Dynamics of Institutional Change

55. Argyris, Chris, Organizations and Innovations. Homewood, Ill., Dorsey Press, 1965.

The author presents a method for measuring interpersonal competence and the ability of a group to solve problems. He reports on studies of the values held by top and middle management and by board members in three organizations. The lack of innovation in these organizations, he believes, was related to poor communication and low interpersonal competence. He then emphasizes the need for procedures which increase interpersonal competence, openness, receptivity, concern for others, trust, and hence risk-taking.

56. Barnett, H. G., Innovation: The Basis of Cultural Change. New York, McGraw-Hill, 1953.

This is a basic conceptual discussion of the introduction of new inventions. It examines the settings in which inventions arise, the incentives to invent, the innovation process itself, and factors which affect either acceptance or rejection of inventions. The author notes the social complications which generate resistance to change when it affects large numbers of interrelated persons.

57. Bennis, Warren G., "Changing Organizations." Journal of Applied Behavioral Science, vol. 2, p. 247-64. 1966.

Bennis identifies five human problems which confront contemporary organizations: integration, social influence, collaboration, adaptation, and revitalization. Bureaucracy was an excellent invention in its time, he feels, but it cannot cope with sizable modern tasks. He foresees a new type of organization which offers more

autonomy for personnel, requires more concern for relationships, depends more on temporary systems, and enhances intrinsic satisfactions.

58. Bennis, Warren G., Changing Organizations. New York, McGraw-Hill, 1966.

These essays cover both the natural evolution of institutions and the processes of deliberate innovation. The author recognizes sensitivity training as a potent facilitator of communication and cooperative change. He uses the term "organizational revitalization" to describe a process by which institutions scan their operations and improve them by means of applied behavioral science.

59. _____, "Theory and Method in Applying Behavioral Science to Planned Organizational Change." Journal of Applied Behavioral Science, vol. 1, p. 337-60. 1965.

The author describes eight types of approach to the deliberate introduction of change. He deplores rationalistic, technocratic, individualistic, and "insight" bases for change since they largely ignore the dynamics of implementation. The power of a change agent, he maintains, lies mainly in the agent's values.

60. _____, K. D. Benne, and R. Chin, eds., The Planning of Change. New York, Holt, Rinehart, and Winston, 1961.

This book contains 81 essays on such themes as concepts of planned change, social systems in stability and conflict, strategic leverage points that can be used to facilitate change, and the importance of influencing, consultation, and training.

61. Boulding, Kenneth, The Organizational Revolution. New York, Harper and Bros., 1953.

This is an appraisal from an ethical point of view of the rise of labor, farmers' organizations, business, and the totalitarian and democratic states. The author sees three great cumulative changes: the increase in population, in capital, and in knowledge. The last of these, he believes, is the most important.

62. Coch, L., and J. R. P. French, "Overcoming Resistance to Change." Human Relations, vol. 1, p. 512-32. 1948.

The authors report that when workers participated directly or through representatives in designing a transition process and new

piece rates, fewer workers quit and the new techniques were more rapidly learned.

63. De Grazia, A., "Elements of Social Invention." American Behavioral Science, vol. 5, p. 6-9. 1961.

De Grazia states that inventiveness is fostered by a high drive for achievement, a marginal relationship to the surrounding society, operationalism (the expression of ideas through action), and relationalism (the perception of connections among disparate elements).

64. Ginzberg, Eli, and E. G. Reilley, Effecting Change in Large Organizations. New York, Columbia University Press, 1957.

The authors assess strategic factors involved in the process of directed change and suggest improvement of typical procedures.

65. Griffiths, Daniel E., "Administrative Theory and Change in Organizations. In Miles, ed., Innovation in Education, p. 524-36.

Some of the main points made by Griffiths are these: "The major impetus for change in organizations comes from the outside." "The degree and duration of change is directly proportional to the intensity of the stimulus from the supra-system." "The more hierarchical the structure, the less the change." He also states that change comes from the top down, and that the number of innovations in an organization is inversely proportional to the period of tenure of its chief administrator. Continually increasing stress on an organization brings the following sequence: lag, overcompensation, and eventual collapse.

66. Guest, Robert H., Organizational Change: The Effect of Successful Leadership. Homewood, Ill., Dorsey Press, 1962.

This is an illuminating account of how a new manager transformed a factory from poor to excellent performance. He first listened and observed carefully; when he was prepared he acted forcefully; and after change was under way he opened up processes of participation by subordinates. The pattern he established persisted after his departure.

67. Homans, G. C., The Human Group. New York, Harcourt Brace, 1950.

The author reexamines five previously published studies to identify internal and external systems of human groups; he also

reexamines the roles played by activity, norms, and sentiment. Change was studied in a Western Electric plant and in a disintegrating New England rural community. The leaders in all group systems initiated interaction and lived up to the norms of the group.

68. Kepner, C. H., and B. B. Tregoe, "Developing Decision Makers." Harvard Business Review, vol. 38, p. 115-24. 1960.

This article describes the Kepner-Tregoe program which trains business executives to diagnose their real problems and to reach decisions that achieve their goals. There is a heavy cognitive emphasis in the program, and the changes introduced are largely corrective rather than creative.

69. Likert, Rensis, New Patterns of Management. New York, McGraw-Hill, 1961.

Long-accepted notions of line-staff distinctions, span of control, and the supervisor role are challenged by Likert, who uses extensive data from industrial and business organizations. He proposes linked teams which could facilitate wise innovations.

70. Lippit, Ronald, Jeanne Watson, and B. Westley, The Dynamics of Planned Change. New York, Harcourt Brace, 1958.

The authors present a theory of how "change agents" can best work with "client systems" to initiate and stabilize innovations. Illustrative cases are discussed. The book points out the similarities of process between individual psychotherapy, face-to-face group discussions, and the workings of organizations and larger communities: all call for diagnosis, including a diagnosis of the client and the change agent; all involve analysis of motivation, examination of possible alternatives, trial and evaluation, stabilization, and termination and consultation.

71. Merton, Robert K., Social Theory and Social Structure. Revised edition. Glencoe, Ill., The Free Press, 1957.

This is a group of essays which develop concepts basic to an understanding of institutional operation. Among those concepts most pertinent to innovation in colleges are these: manifest and latent functions, social structure and anomie, bureaucratic structure and personality, self-fulfilling prophecy, and the sociology of knowledge.

72. Miles, M. B., "On Temporary Systems." In Miles, ed., Innovation in Education, p. 437-90. New York, Bureau of Publications,

Teachers College, Columbia University, 1964.

The author notes a "remarkable proliferation of short-term quasi-Utopias of all sorts--conferences, meetings, task forces, research projects, experiments, training exercises. It is as if we have traded the grand visions of social life as it might be lived for miniature societies, to which one can become committed intensively, meaningfully, satisfyingly--and impermanently." Among the changes which occur in temporary systems are decreasing defensiveness, a greater spirit of play, increasing interpersonal friendship, esprit de corps, involvement, authenticity, and equality, improved problem solving, and a preference for innovation. Dangers include input overload, unrealistic goals, a lack of process skills, alienation, and linkage failure.

73. Parsons, Talcott, "The Problem of Controlled Institutional Change." In Essays in Sociological Theory, p. 238-74. Revised edition. Glencoe, Ill., The Free Press, 1954.

"Vested interests," Parsons maintains, are a special case of diverse motivational forces in an institutional structure. "It is the mutual reinforcement of the different elements which is the principal source of rigidity" in an institution. The author believes that solidarity with the group may take precedence over functionally adequate achievement. "The chances of successful influence do not depend mainly on the apparent reasonableness of what is transmitted, but on its relation to the fundamental equilibrium on which it impinges." A completely integrated social system is rare or impossible, Parsons says; hence, there is always some force which can be enlisted to support change.

74. Rogers, E. M., Diffusion of Innovations. New York, The Free Press of Glencoe, 1962.

Rogers has found that farmer innovators are more likely to operate larger farms, have higher incomes, and attend meetings away from home; similar patterns exist among business, medical, and educational innovators. Among Rogers' major points are these: Innovativeness goes with a modern orientation rather than a traditional one. Late adopters are more likely to discontinue an innovation than are early adopters. Impersonal sources create an awareness of the need for an innovation, but personal sources are more important for its adoption. Compatibility, complexity, and divisibility all affect the rate of innovation adoption. Early adopters of innovation are younger persons, who have higher status, more money, and a more cosmopolitan outlook. Change agents communicate more with high-status

persons than with low-status ones.

75. Schein, E. H., and W. G. Bennis, Personal Organizational Change Through Group Methods: The Laboratory Approach. New York, John Wiley, 1965.

The authors describe laboratory training and its uses in improving the ways that individuals, corporations, hospitals, social agencies, and other groups function.

76. Sofer, Cyril, The Organization from Within. London, Tavistock Institute of Human Relations, 1961.

Sofer presents three case studies of institutional change: an industrial concern, a unit within a hospital, and a technical college about to establish a new department. The consultant's pattern was to assemble facts, report them, and to participate in subsequent planning. Some generalizations made by the author are these: groups repeat unsuccessful attempts at change; there is an initial reluctance to rely on a consultant; the cooperation of the top official is needed; clients expect magical solutions; there is a tendency to either magnify or minimize the contributions of the consultant; and problems of a part of an organization must be seen in relation to the larger system. "Sooner or later," Sofer feels, "one must alter that last safe object--oneself."

77. Watson, Goodwin, "Psychology of Social Change." In Social Psychology, Issues and Insights, chap. 15. Philadelphia, J. B. Lippincott, 1966.

Watson reviews personality and system characteristics which underlie the resistance to the accelerating changes of our culture. He outlines a process of innovation, beginning with felt dissatisfaction, and moving to diagnosis, whole-part relations, creative design, force field analysis, resistance reduction, and diffusion. He also points to the usefulness in innovation of participation, temporary systems, and leadership.

78. _____, "Some Hypotheses Concerning Social Change." Journal of Educational Sociology, vol. 14, p. 9-17. 1940. Vol. 14, p. 554-60. 1941.

The author gives 300 hypotheses on theories of change, social inertia, the life-cycles of reforms, utopian experiments, personality factors, leadership, organization, propaganda, and revolution.

79. Watson, Goodwin, "Structure--Process--Attitude." In Social Psychology, Issues and Insights, chap. 6.

Watson challenges the tradition that personal attitude change precedes organizational change. He finds that most change in attitudes derives from change in the processes of interaction, which in turn has arisen as a result of change in the system and structure.

80. _____, and E. M. Glaser, "What We Have Learned About Planning for Change." Reprint from Management Review, 1965. New York, American Management Association, 1965.

This article emphasizes the importance to innovation of diagnosis and of participation by those concerned. The authors suggest that the reduction of resistance is a more valid approach than trying to overcome it.

D. Concepts of Change in Educational Institutions

81. Baskin, Samuel, "The Educational Researcher: Change Agent or Safety Man?" In A Conceptual Framework for Institutional Research. Pullman, Wash., Washington State University, 1963.

Baskin states that the educational researcher must take a far more active role in the innovation and exploration of new program ideas in higher education than he now does. The "change agent" aspect of the educational researcher's role should be given top priority. Discussing various inroads that can be made to effect change, the author suggests (1) establishment of faculty project grants, (2) the introduction of outside consultants, (3) the discovery of ways to keep the faculty abreast of new developments in higher education, and (4) faculty workshops.

82. Bell, Daniel, The Reforming of General Education: The Columbia College Experience in Its National Setting. New York, Columbia University Press, 1966.

Bell compares the educational programs at Columbia, Harvard, and the University of Chicago, emphasizing the concepts which facilitate adaptation to social change. He places change in the college against the background of changes in the society. He recommends a curriculum in which the first year gives "background knowledge," the next two years train the student in a discipline, and the final year includes a seminar in the discipline plus courses designed

to bring the special discipline into its larger social and intellectual context (for example, its relation to the development of new states, the philosophy of science, and the nature of language). Bell reports that at Columbia the "center of gravity" was in the undergraduate college from 1858 to 1880, in the professional schools from 1880 to 1920, in the college from 1920 to 1930, and since then it has been in the graduate faculties. While recognizing that rational action cannot be expected, Bell does not grapple with the actual dynamics of social and educational change.

83. Bhola, H. S., "Implications of New Democratic Theory for Planned Educational Change." S.E.C. Newsletter, vol. 1, No. 3. November, 1965.

"New" democratic theory recognizes that state-sized units of government have replaced town meetings; it sees publics instead of a public; and it is concerned with integration and reconciliation of diverse interests.

84. Bruner, J. S., "Education as Social Invention." Saturday Review, p. 70 ff. February 19, 1966.

Bruner identifies human progress with the accumulation and use of "tools" (for example, language). He sees more of a need to study the "possible" than the "achieved."

85. Cartter, Allan M., "Innovation in Higher Education: Trends and Problems." Address to Danforth Foundation Workshop. Colorado Springs, July 5, 1966.

"We have been concerned for so long with the 'tidal wave' of the late 1960's--now upon us--that we sometimes forget that enrollments will continue to grow to something like 15 million undergraduates by the end of the century." "If percent trends continue there will be more students in graduate schools at the end of the century than there were in undergraduate colleges in 1947." Cartter believes that the "waste of talented manpower used as 'talking books' is shameful today." He believes that the "college is as subject to intellectual obsolescence as is the world of industry to technological change." "Innovation is not a natural propensity of academic man," and the tradition of consensus blocks curriculum innovation. "Labor-saving" technology in teaching has already proved not very economical and "diabolically illiberal," Cartter states. Yet the creation of differentiated, experimental subcolleges, each with a distinctive emphasis but having access to the resources of the whole complex, is very promising. Cartter sees these seven obstacles to innovation:

(1) control by faculty consensus, (2) unwise emphasis on "labor-saving" and mass media devices, (3) the lack of students with the desired interests and attitudes, (4) the diversion of faculty from teaching, (5) graduate school influence on prospective college teachers, (6) the pressure on institutions toward upward mobility, and (7) state-wide budgetary controls which emphasize numbers over quality.

86. Coombs, Philip H., "Education's Greatest Need: A Vice-President in Charge of Heresy." Phi Delta Kappan, vol. 41. 1960.

The author points out that the fastest-growing industries have been spending the most for research and development, but in education research and development has been at "a pitifully low level." Every institution of higher learning might well have an able top official in charge of research and development; he would welcome fresh ideas, encourage the initiation of new programs, evaluate results, and finally disseminate those results. Coombs advocates that 1 to 2 percent of a college's annual budget be used for this purpose.

87. _____, "The Greatest Shortage in Education." Clearing House, vol. 35, p. 195-200. 1960.

Coombs notes that the fast-growing chemical industry spends 3 to 5 percent of its gross sales on research, yet less than 1 percent of the total expenditures of education are for research.

88. COPED (Cooperative Project in Educational Development), "Report." Strategies for Educational Change, vol. 1, Nos. 7 and 8. 1966.

89. Cornford, F. M., Microcosmagraphia Academica: Being a Guide for the Young Academic Politician. Cambridge, England, Dunster House, 1932.

"Nothing is ever done until everyone is convinced that it ought to be done, and has been convinced for so long that it is now time to do something else," the author wryly observes.

90. Culbertson, Jack, "Organizational Strategies for Planned Change in Education." Paper presented at Conference on Strategies for Educational Change, Washington, Nov. 8-10, 1965. Abstract in S.E.C. Newsletter, vol. 1, No. 4, p. 4-5. 1965.

Systems of research, planning, and development are weak or missing in American education, Culbertson states. He recommends a national educational academy, an institute which would study innovation and operations in school planning.

91. Gephart, William J., "Criteria for Methodological Adequacy for Research on Social Change." Paper presented at Conference on Strategies for Educational Change, Washington, Nov. 8-10, 1965. Abstract in S.E.C. Newsletter, vol. 1, No. 4, p. 3-4. 1965.

Gephart suggests a four-dimensional model to consider interaction among the nature of the desired innovation, the change agent, the target, and the strategy. He recognizes the historical, the descriptive, and the experimental as possible research methods.

92. Guba, E. G., "Some Experimental Techniques." S.E.C. Newsletter, vol. 1, No. 9, p. 2-3. 1966.

The author spells out nine tactics to properly bring about educational innovation. (1) Theoretical and programmatic analysis should be done first. (2) An explicit theoretical or logical framework should be created. (3) Unexpected events should be used to redefine research objectives. (4) There should be constant replication and recycling of procedures to create more confidence in conclusions. (5) Quasi-experimental designs should be created to compare planned or happenstance interventions. (6) While experimental controls may not be possible, the trial of conclusions in different populations can clarify the extent of their applicability. (7) New techniques, like rules of evidence in law, should be developed. (8) Logical inferences should be used more than statistical ones. (9) Pathologies should be examined in order to understand the normal.

93. _____, and D. L. Clark, "An Examination of Potential Change Roles in Education." S.E.C. Newsletter, vol. 1, No. 2. October, 1965.

This article presents a chart showing objectives, criteria, and relationships for processes of research, development, diffusion, and adoption. Distinctions are made between invention and design; dissemination and demonstration; and trial, installation, and institutionalization.

94. Kimball, Solon, "Social Science Research and Higher Education." Human Organization, vol. 21. 1962-63.

Kimball observes that the problems attendant upon increasing size reveal the similarities between the university and the corporation or the government bureau. Centralization, he writes, intensifies the problems of communication, cohesiveness, and morale. "The organizational structure of higher education . . . the three tiered hierarchy of administration, faculty, and students" in which each defends its

prerogatives against the others "represents a massive conservatism." "The problem is one of social engineering based upon sound research" which we do not yet possess.

95. Lorish, Robert E., "Planning and Operations Control." Journal for Higher Education, vol. 35, p. 211. 1964.

The author recommends increased attention to the control of planning and operations. He sees the need for a planning and operations officer directly responsible to the president of the institution; this officer should be patterned on the "rational administrator" rather than the "great leader" model.

E. Descriptions of Current Innovations in Higher Education

96. Abrams, Irwin, "The Student Abroad." In Baskin, ed., Higher Education, chap. 4, p. 78-103.

Current programs of study abroad are described. Abrams asserts that the "weakest link" in these programs is in their lack of integration with the education at the home campuses.

97. Arizona, University of, Changing Roles and Patterns in Higher Education. Tucson, University of Arizona Press, 1962.

In this volume C. P. Odegard presents a comparative view of change in U. S. colleges; W. H. Cowley discusses the roles of the president, trustees, and professors; and J. Grunewald looks at American universities and their relation to underdeveloped countries.

98. Barber, C. L., More Power to Them: A Report of Faculty and Student Experience in the Encouragement of Student Initiative. Amherst, Mass., Committee for a New College, 1962.

This is an account of experiments with freshman seminars, which asked students to explore a subject in depth, and with student seminars for upperclassmen, which were led by students and were used as an adjunct to lectures. The freshman seminars suffered from early confusion; the papers were often superficial, and the demands on faculty time were greater than had been anticipated. The student seminars too often degenerated into "bull sessions," and a few disgruntled students sometimes hurt the morale of all members.

99. Baskin, Samuel, ed., Higher Education: Some Newer Developments.

New York, McGraw-Hill, 1965.

This volume includes studies of the following topics: new colleges (Mayhew), curricula (McGrath, Meeth), independent study (Dearing), study abroad (Abrams), programs for abler students (Goldberg, Kurland), new media (Carpenter, Greenhill), facilities (Horn, King, Morisseau), community as a resource for learning (Pitkin, Beecher), improvement of administration (Cooper), academic calendar changes (Stickler), interinstitutional cooperation (Bunnell, Johnson), finances (Russell), and campus climate (Rice).

100. Blanke, Virgil E., ed., Strategies for Educational Change. Columbus, School of Education, Ohio State University, 1965.

Ten newsletters, related to a Conference on Strategies for Educational Change held in Washington, November 8-10, 1965, discuss concepts and schemes for understanding change.

101. Bonthius, R. H., and others, The Independent Study Program in the United States. New York, Columbia University Press, 1957.

This is a descriptive historical review of 20 college honors programs. The most frequent complaint from students about these programs was inadequate advising; faculty members most often cited the excessive burden on their time.

102. Brown, J. W., and J. W. Thornton, eds., New Media in Higher Education. Washington, National Education Association, 1963.

Among the practices described in this book are the use of closed-circuit television, films, language laboratories, programmed instruction, video tapes, and large transparencies and overhead projections. The contributors acknowledge the resentment of some faculty members over the heavy financial investment in such equipment. The rule for its use seems to be brief experimentation, followed by a relapse to traditional methods.

103. Brownell, Baker, The College and the Community. New York, Harper and Bros., 1952.

The cloistered campus is unreal, the author believes. He asserts that college should not be regarded as a prelude to life, but should involve students actively in significant events.

104. Carlin, E. A., and E. B. Blackman, eds., Curriculum Building in General Education. Dubuque, Iowa, William C. Brown Co., 1960.

This volume outlines the four basic areas into which general education is organized at Michigan State University.

105. Clark, B. R., "Interorganizational Patterns in Education." Administrative Science Quarterly, vol. 10, p. 224-37. 1965.

Clark describes the organizational pattern arising from the Physical Science Study Committee and that found in consortia of colleges. He recognizes the need for a theory of confederative organization.

106. Cohen, Joseph, "The Superior Student." Newsletter of the Inter-University Committee for the Superior Student, vol. 5, No. 3. January-February, 1963.

The author conceives of the notion of a "critical mass" necessary to influence the attitudes of a whole campus.

107. Council for Advancement of Small Colleges, CASC Newsletter.

The council was founded in 1956. Its newsletters vary from four to 20 pages and give brief items on innovations along with the addresses delivered at annual conferences. The material most relevant to our topic is probably a brief piece, "Self-Renewal in the Liberal Arts Curriculum" (vol. 8, No. 12, August, 1964).

108. Dearing, Bruce, "The Student on His Own: Independent Study." In Baskin, ed., Higher Education: Some Newer Developments, chap. 3, p. 49-77.

Dearing reviews the various adaptations of the basic idea of student self-direction. He reports that students are initially resistant to such programs, but eventually they prefer more work of this kind. Successful independent work has been done by average or below-average students as well as by abler students. Freshmen can also use this approach, but at no level can students simply be left to their own devices. Furthermore, independent study makes heavy demands on teachers.

109. Educational Testing Service, New Approaches to Individualizing Instruction. Princeton, 1965.

Moore reports on reactions of young children to a "talking typewriter"; Crutchfield describes an experiment in teaching the processes of logical thinking to sixth-grade students through the use of programmed materials; and Carter proposes a national laboratory to develop new instructional materials and procedures.

110. Freeman, S. A., Experience in Undergraduate Study Abroad. New York, Institute of International Education, 1964.

This book reports that programs of study abroad have increased from a half-dozen in 1950 to more than 100 in 1964.

111. Fund for the Advancement of Education, Better Utilization of College Teaching Resources. New York, 1959.

Projects are described which are financed by the Fund for the Advancement of Education and designed to prune proliferated course offerings.

112. _____, Four Case Studies of Programmed Instruction. New York, 1964.

Experiences with programmed instruction in elementary and secondary schools in Denver, Chicago, Manhasset, N. Y., and Provo, Utah, are discussed. There is an introduction and conclusion written by Wilbur Schramm. No analysis of the innovative process in this type of instruction is given.

113. _____, They Went to College Early. New York, 1957.

In the fall of 1951, 11 American colleges and universities opened their doors to 420 freshmen on an early-admission basis. This report describes that project. The underlying assumptions for the project were that an early-admission policy would lead to greater differentiation of individual characteristics among the student population, and would also lead to a better continuity in the student's education. The origin and development of the experiment, however, are not discussed. Data support the conclusion that all the institutions involved found the program to be fairly successful. On the whole, the participating students out-performed average students and the control group, but there were more academic failures and more problems in emotional and social adjustment in the experimental group.

114. Gideonese, H. D., "The National Program of Educational Laboratories." Phi Delta Kappan, vol. 47, p. 130-33. 1965.

This article proposes regional laboratories which would implement educational change by disseminating innovations.

115. Goldberg, M. H., and N. D. Kurland, "The Abler Student." In Baskin, ed., Higher Education: Some Newer Developments, chap. 5, p. 104-127.

The Inter-University Committee on the Superior Student urges that he should be identified early; that special programs should be made available to him immediately on admission; that restrictive requirements should be minimized; that primary sources should be used as much as possible in his courses; that these students should be used as apprentice teachers and counselors; that an "honors center" should be established; and that there should be liaison between this program and graduate schools.

116. Hauf, H. D., and others, New Spaces for Learning: Designing College Facilities to Utilize Instructional Aids and Media. Troy, N. Y., Rensselaer Polytechnical Institute, 1961.

The authors attempt to envision integrated uses of films, tapes, television, responsive machines, etc., in relation to appropriate space design of facilities. They are primarily concerned with such things as equipment, lines of vision, acoustics, etc.

117. Horn, F. H., J. King, and I. I. Morisseau, "Facilities and Learning." In Baskin, ed., Higher Education: Some Newer Developments, chap. 7, p. 153-73.

The authors feel that educators often underestimate the importance of facilities and thereby accept piecemeal, uncoordinated, unplanned additions to their institutions.

118. Johnson, B. Lamar, Islands of Innovation: A Report of an Exploratory Survey of the Utilization of Junior College Faculty Services. Los Angeles, School of Education, U.C.L.A., 1964.

Johnson lists junior college innovations under such headings as faculty recruitment, aids to faculty, class size, technological devices, independent study, work-study, the year-round calendar, credit by examination, and cooperation among colleges. However, there is no discussion of how these changes have been brought about. A half-dozen schools have evaluated the effect of new media on student learning: some find that it has been favorable; others that the new media make no difference.

119. Johnson, E. L., "College Federations." Journal of Higher Education, vol. 37, p. 1-9. 1966.

The author asks where do ideas originate in colleges? And he answers his question by saying: "Everywhere, without order: they come from presidents, deans, business offices, departments, faculty members, students and the central office."

120. Layton, Elizabeth N., Innovations in Curriculum Organization and Instructional Methods in Colleges and Universities. Washington, U. S. Office of Education, April, 1948.

This is a compilation of 91 references on developments in curriculum and teaching methods that were new at the time. The author is concerned with what should be done, not how it is to be done.

121. Lowry, H., and W. Taeusch, Research, Creativity and Teaching. Bulletin No. 33. New York, Carnegie Foundation for the Advancement of Teaching, 1953.

A five-year program of grants-in-aid from the Carnegie Foundation to teachers in southern colleges is reviewed. One problem to be overcome, the authors note, is that teachers sometimes go stale; teachers were found to be "at their best" during the period between their fourth and fourteenth years of experience. Most recipients of grants felt that their period of research had refreshed their teaching.

122. McGrath, Earl J., and L. R. Meeth, "Organizing for Teaching and Learning: The Curriculum." In Baskin, ed., Higher Education: Some Newer Developments, chap. 2, p. 27-48.

The authors state that faculty opinion supports the combining of general education and specialized instruction, both to be taught concurrently. They show that current curricular emphases are on general majors, courses on world affairs, independent study, study abroad, honors programs, new instructional media, work and field experiences, and the reduction of course proliferation.

123. Meaney, J. W., Televised College Courses. New York, Fund for the Advancement of Education, 1962.

Meaney reports on the experiences of 27 colleges which were given financial support for "faculty released time." He specifies the apparent advantages, disadvantages, and future possibilities for such a program.

124. Miller, Carroll Lee, "A College Program Based on Emerging Purposes and the Maturity of the Student Clientele." Unpublished doctoral dissertation, Teachers College, Columbia University, 1952.

This dissertation is based on questionnaires answered by students, faculty members, and administrators. Miller sets out some "principles for program improvement," such as the ability to adapt to new situations, the setting of mutual goals, and the desire for continuous

improvement. One of his findings is that faculty members tend to reduce personal dissonance by neglecting the needs of their students.

125. Miller, W. S., and K. M. Wilson, Faculty Development Procedures in Small Colleges. Atlanta, Southern Regional Education Board, 1962.

Several faculty development procedures utilized by a number of southern colleges are described and appraised.

126. Pitkin, R. S., and G. Beecher, "Extending the Educational Environment." In Baskin, ed., Higher Education: Some Newer Developments, chap. 8, p. 174-95.

The authors describe work programs, off-campus research and exploration approaches, community service projects, and study abroad programs, noting that such emphases demand of faculty members new ways of planning, assigning, and evaluating study. The most difficult task, the authors say, is relating on-campus to off-campus experiences so that each one aids the other.

127. Prior, John J., "The College Characteristics Index as an Instrument for Identifying Areas of Self-Improvement in a Single University." Unpublished doctoral dissertation, Teachers College, Columbia University, 1963.

Prior found that the greatest opportunities for change existed when the college administrators were aware of a "press" from the environment and were in accord with that "press."

128. Riley, John W., The Student Looks at His Teacher. New Brunswick, N. J., Rutgers University Press, 1950.

A process by which students rate their instructors is described.

129. Sammartino, Peter, "Multiple Campus Colleges." Journal for Higher Education, vol. 35, p. 503. 1964.

Among the reasons for multiple campus colleges that the author observes are the increasing number of students, the desire for prestige, the desire to reduce academic competition, an "eager beaver" attitude on the part of some educators, and the belief that some educational services are better given locally. The greatest problem for such colleges is adequate library resources.

130. Schramm, Wilbur, "Learning from Instructional Television."

Review of Educational Research, vol. 32, No. 2, p. 156-67. 1962.

This is a review of educational experiments with television and of comparisons that have been made between live and televised teaching. Results vary, Schramm states, depending on the teacher, the students, the course content, and the methods employed, but on the whole the differences between the two forms of instruction are slight.

131. Schramm, Wilbur, Programmed Instruction Today and Tomorrow. New York, Fund for the Advancement of Education, 1962.

Schramm recommends that more attention should be paid to the "growing edge" of programmed instruction rather than to wholesale investment in present approaches. "Programmed instruction is very slow to rise to its revolutionary potential," he states.

132. _____, ed., The Research on Programmed Instruction. Washington, U. S. Office of Education, 1964.

This volume offers evidence that programmed instruction is usually as effective as more conventional teaching methods, and is often better, especially in the dissemination of information and the development of concepts.

133. Stickler, W. H., ed., Experimental Colleges. Tallahassee, Florida State University, 1964.

This is a collection of papers from a colloquium on experimental colleges. One of the contributors, Marjorie Carpenter, pleads for genuinely creative innovations; she describes programs on 11 campuses and stresses the value of particular deviations from the norm. B. Lamar Johnson lists four unsolved problems for higher education: (1) the conflict between teaching and research; (2) the high costs of better programs; (3) the difficulty in sustaining innovations once the initial financing has been spent; and (4) the loss of zest for change as institutions and persons grow older. None of the papers focus on the process of introducing or facilitating change.

134. _____, and W. M. Carothers, The Year-round Calendar in Status, Trends, Problems. Atlanta, Southern Regional Education Board, 1963.

The authors analyze the resistance to giving up the customary summer vacation period. They note that there are other problems such as the extra time required for registration and academic

ceremonies and the lack of time for renovating facilities.

135. Trinkhaus, Charles, ed., A Graduate Program in an Undergraduate College: The Sarah Lawrence Experience. Middletown, Conn., Wesleyan University Press, 1956.

The development of a graduate degree program at Sarah Lawrence is discussed. The inauguration of the program was stimulated by demands for a master's degree that was not commonly offered. The success of two summer workshops at Sarah Lawrence for N.Y.U. graduate students in higher education gave added confidence to the innovators. The program was proposed, guided, and evaluated by a Faculty Committee on Graduate Studies. Graduate students, however, actually proved to be less mature and self-directed than the faculty had expected them to be. Case studies of seven students are presented.

136. Wendt, Paul R., and G. K. Butts, "Audiovisual Materials." Review of Educational Research, vol. 32, No. 2, p. 141-55. 1962.

The authors of this article contend that facts, concepts, and technical skills can be effectively learned from instructional films.

137. Williams, C. M., "Packaged Program for In-service Audiovisual Education." Audiovisual Instruction, p. 552-55. September, 1965.

The educational approach described here involves an orientation meeting plus 10 sessions, each led by a different teacher, using a prepared kit of materials. Guidelines of developing similar programs in other educational areas are scheduled to appear soon.

138. Zisman, S. B., and C. Powell, New Campuses for Old: A Case Study of Four Colleges that Moved. New York, Educational Facilities Laboratory, 1962.

This study stresses the need for a carefully developed "transition plan" when a college moves to a new campus.

F. Innovations Within the College Classroom: Improving Teaching

139. Argyris, Chris, "Explorations in Interpersonal Competence." Journal for Applied Behavioral Science, vol. 1. 1965.

The author demonstrates that a "laboratory" approach surpassed

a lecture method in fostering interpersonal competence in a course for business executives.

140. Association for Supervision and Curriculum Development, The Way Teaching Is: A Report of the Seminar on Teaching. Washington, National Education Association, 1966.

Papers by Philip W. Jackson, N. L. Gage, H. M. Kliebard, and S. M. Corey deal mainly with concepts underlying research exploration of teaching in elementary and secondary schools. Corey's study, "The Present State of Ignorance about the Factors Affecting Teaching Success," has a particularly significant title. It is noteworthy that so little innovation has derived from careful educational research and that hope springs recurrent (if not eternal) that the newest and latest approach will be more productive.

141. Baskin, Samuel, "Independent Study: Methods, Programs and for Whom?" In Current Issues in Higher Education. Washington, Association for Higher Education, 1962.

Baskin maintains that the aim of higher education is to force the student to ask, "What do I think?" not "What does the book--or the professor--say?" In an effort to move away from the "packaging theory of education"--which assumes that in order for learning to take place, students must attend classes a certain minimum number of hours per week for a certain number of weeks--by 1959 some 16 institutions had undertaken research and program studies on the effectiveness of independent study. Students found (1) that they learned as well by independent study methods as by regular methods; and (2) that after initial dissatisfaction, they came to enjoy independent study methods. Baskin also points out that (1) little difference is apparent in the retention of knowledge between groups of students using independent study or traditional methods; (2) evidence does not indicate that independent study must be reserved for superior students; (3) freshmen appear to benefit as much as upper-classmen from independent work; and (4) while the teacher's role is changed, he is still vital in preparing students for independent work.

142. _____, "Quest for Quality: Some Models and Means." In Winslow R. Hatch, ed., New Dimensions in Higher Education, No. 7. Washington, U. S. Office of Education, 1960.

Research designed to compare the effectiveness of independent study and more traditional methods of study is summarized. The author describes several of the newer curriculum patterns that are being inaugurated to improve instruction.

143. Cooper, R. M., "Improving College Teaching and Administration." In Baskin, ed., Higher Education: Some Newer Developments, chap. 9, p. 196-222.

Cooper reviews a number of projects, among them the Ford Foundation plan for a three-year master's degree program at 40 institutions; the "Meet the Professor" television series; the use of classroom visits among colleagues at the University of Missouri; and teaching intern programs like that of the Fund for the Advancement of Education.

144. Davis, Richard H., "College Teacher Project." North Central Association Quarterly, vol. 27, p. 251-59. 1963.

This is a description of a most extensive and persistent self-improvement project. It was started by the Carnegie Corporation and has since become self-sustaining. It has been in operation for 25 years and includes some 100 liberal arts colleges. Three workshops, each of four weeks, are held annually at the University of Minnesota and the University of Michigan. Materials are exchanged among the schools, and coordinators pay periodic visits to the institutions.

145. Diekhoff, John S., Tomorrow's Professors. New York, Fund for the Advancement of Education, 1960.

The author reviews the results of 18 grants by the fund to universities between 1953-58 to enable instructors to get a better start in teaching.

146. Estrin, H. A., and D. M. Goode, eds., College and University Teaching. Dubuque, Iowa, William C. Brown Co., 1964.

This book contains 122 selections from articles published in the journal of the same name. The selections contain abundant ideals, suggestions, and advice, but they are little concerned with the conditions which support or discourage educational innovation. However, there are many important insights included.

147. Gage, N. L., ed., Handbook of Research on Teaching. Chicago, Rand McNally, 1963.

The articles in this volume review and summarize published research bearing on effective classroom methods.

148. Gross, C. H., ed., College Teachers Look at College Teaching. Washington, American Association of College Teacher Education, 1965.

A report on seminars held in 1962 and 1963, this volume presents some of the papers delivered. One of the contributors, Bills, identifies the concerns of teachers, evaluating their priority rating from high to low. Rice offers the thesis that time and effort in colleges usually go to the problems that are easiest to deal with, even though they may be of little importance; difficult and controversial problems are bypassed despite their importance. A summary chapter urges academic freedom, recognition of good teaching, clear educational goals, sound values, competent scholarship, etc. However, there is no examination of how these different goals can be achieved.

149. McKeachie, W. J., "Procedures and Techniques of Teaching: A Survey of Experimental Studies." In Nevitt Sanford, ed., The American College. New York, John Wiley, 1962.

McKeachie states that when experiments with independent study are compared with the usual types of classroom instruction, the former proves more effective in developing problem-solving skills and attitudes but less effective in conveying factual information.

REACTIONS

In order for this second series of "New Dimensions in Higher Education" to better serve the needs of colleges and universities throughout the nation, reader reaction is herewith being sought. In this instance, with respect to Innovation in Higher Education: Developments, Research and Priorities, the following questions are asked:

1. Can you suggest other experimental programs or completed research, the results of which would add significantly to this report?
2. What problems related to this subject should be given the highest priority, in terms of further research?
3. What helpful suggestions do you have for the college or university that wishes to establish an academic climate that is favorable to constructive innovation and change? And, how does a college or university accelerate the rate of bridging the gap between research and action?
4. What can the United States Office of Education do to encourage self-examination and innovation in the nation's colleges and universities?

Kindly address reactions to:

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